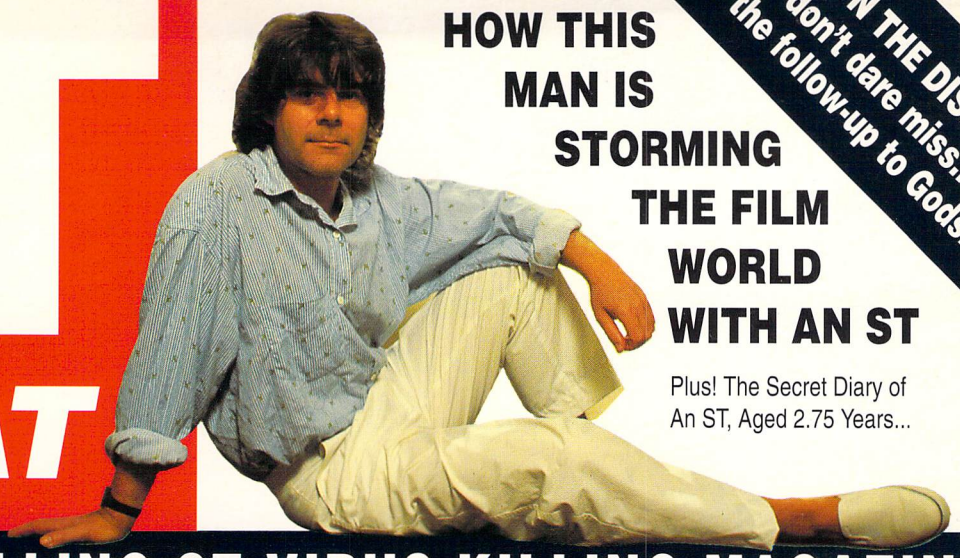
ISSUE 26 ■ SEPTEMBER 1991 ■ £2.95

ST FORMAT



HOW THIS MAN IS STORMING THE FILM WORLD WITH AN ST

Plus! The Secret Diary of An ST, Aged 2.75 Years...

ON THE DISK: don't dare miss... the follow-up to Gods!

BRITAIN'S BEST-SELLING ST VIRUS-KILLING MAGAZINE

Defend your ST from deadly virus danger

CAPTURED! We analyse more than 30 viruses

VIRUS KILLER

Protect yourself against nearly 60 viruses: there's no virus this killer can't detect

- HOW TO TELL IF YOU'RE INFECTED – *and what to do when you are*
- HOW TO TRACK THEM DOWN – *and kill them stone dead*
- HOW TO PROTECT YOURSELF – *and keep your ST pure*

ST FORMAT COVER DISK 26

MAGIC POCKETS EXCLUSIVE!



ULTIMATE VIRUS KILLER
This special version of Douglas Communications' utility kills viruses *and* prevents them in the first place

XCONTROL Atari's swish TT control panel – far more advanced than earlier ST versions – works with STs, STEs and Megas too

LOUD FORMATTER Disks? Don't talk to me about disks. Here it is, brain the size of a planet – the talking format program!

PLUS
- All the bits Atari left out of TOS 1.4
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- Bullfrog assembly program guide

ALL PROGRAMS STE COMPATIBLE

MAGIC POCKETS
Trouser-bulges to impress anyone! Renegade's new platform-demo really puts the wind in your shorts



Disk format by Rob Northen

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THEN DEMAND ONE FROM YOUR NEWSAGENT NOW!

123 EXCELLENT REASONS TO LOOK INSIDE
- We cheat 56 hot games...
- Review & rate 18 new ones...
- Check out 15 PD titles...
- Reveal 14 top techie tips...
- And name Delphine's top 20

- Phew – *MidWinter 2:* here at last! Is it worth its wait in *FORMAT* Gold?

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The ST is just

The Atari ST is the perfect introduction to the world of computing. The power of the ST allows you to run "serious" applications as well as playing games, and the ST system is flexible enough to allow you to expand as you develop your interests and expertise in different applications.

With so much diversity and power it is easy to see why the Atari ST family is one of the most successful ranges of computers in the world. But best of all is the built-in growth potential. The 520ST user of today is the TT user of tomorrow; beginning with games or a simple word processor, anyone can learn about computers and gradually acquire the skills of the professional computer user. And unlike many other systems, an Atari upgrade is not wasteful. Much of the software available for the 520ST will run on both the Mega STe and the TT systems. With an Atari an upgrade means that you can add new capabilities and expand your computing horizons without losing everything you have acquired along the way.

*If you thought that computers were all about playing games you've been missing out on the real potential that you and your computer have. To find out more about either the **Atari ST** or peripherals for any applications simply fill in the coupon and send it to Atari at the address below.*



*Whether you are looking for a leisure computer, an educational computer, a computer for all the family or a powerful business system, look no further than the **Atari ST Range.***

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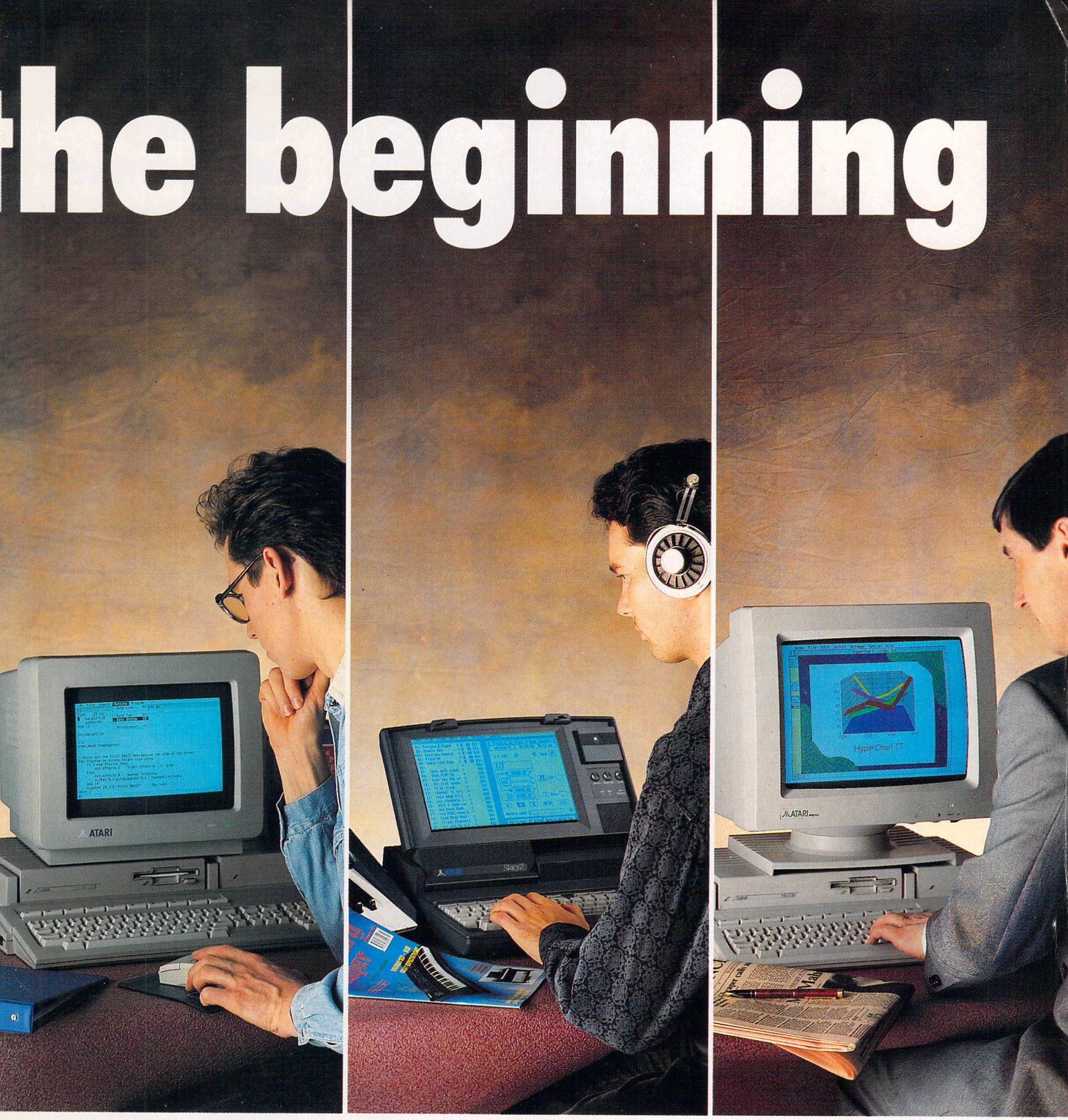


The **Atari 520ST** is an easy way for you and your family to learn about computers while having a great deal of fun. This best-selling computer has an impressive range of features that fit many requirements at home or in the office. A generous 512K RAM memory is included as standard - enough to run large spreadsheets and databases as well as the latest generation of computer games. There are plenty of expansion ports available for printers, modems, monitors and hard disk, and other peripherals allowing you to increase the power and flexibility of your system as needed.
MIDI expansion ports are fitted as standard. MIDI (Musical Instrument Digital Interface) is the music industry standard interface that allows you to control both recording and playback of synthesisers and other digital instruments with your computer.

There is no other computer range in the UK that can offer its users such a wide variety of software support, ranging from educational learning programs to 16-bit computer games to professional quality desktop publishing packages.

The ATARI ST

the beginning



The power of the new **Mega STe** range makes it a serious contender for those who are after power computing. It is an ideal machine for the student or computer enthusiast who wants to run memory intensive applications such as Computer Aided Design (CAD) or graphics applications. The Mega STe features separate keyboard and central processor with a 1MB floppy disk drive and a 50MB Hard Drive for data storage. The Mega STe features a fast 16MHz operating speed, which can be switched to 8MHz to run any programs developed for the 520ST, making it even easier for you to upgrade.

For those of you who want to run a 'home office' with separate files for word processing, spreadsheets and accounts packages the Mega STe - with its vast amount of built-in hard disk storage - is an excellent choice. For those running graphics intensive programs the faster operating speed will make the Mega STe a much more productive machine. The Mega STe also features an extensive range of expansion ports that allow you to add even more power and flexibility to your system.

The portable **Atari Stacy** is completely compatible with all monochrome ST programs, but allows for complete portability.
It features a supertwist backlit LCD mono screen, split horizontally and has all the standard ST ports. It is available in various configerations, with Hard disk as standard.
It weighs approximately 15.2 pounds and has its own carrying handle making it easy to transfer from place to place.
Because the ST, with its MIDI interface has become the accepted standard in the music industry, the Stacy is a boon machine for musicians with a busy schedule. Songs and sequences written at home can be stored on the built-in hard disk, then the whole computer can be easily transported to the studio or gig, with minimum stress, they can even be worked upon and improved on the road.
Although it is the most specialist member of the ST family, the Stacy is still versatile enough to be used for all serious ST applications.

The incredibly powerful **Atari TT**, at the very top of the Atari range, is the first in a new generation of high specification professional personal workstations based on the successful Atari ST standard. Similar in style and design to the Mega STe, the Atari TT features a separate keyboard, 1MB floppy disk, 50 MB Hard Drive and the same range of excellent expansion ports. The basic model comes configured with 2MB RAM which can be expanded up to a massive 26MB. With a Motorola 68030 central processor, the TT runs at up to 32MHz. But speed and power are not all the TT system offers the professional user. Six standard built-in screen resolution modes mean that there is always one suitable for the purpose that you have in mind. For animation or computer graphics, choose from a pallette of over 4,000 colours with the ability to display 256 on screen at any one time, and the exceptional 1280 x 960 pixel high resolution mode is one of the best screen modes available at any price.

— More than just great games



ST FORMAT

ABC January – June 1991 70,256!

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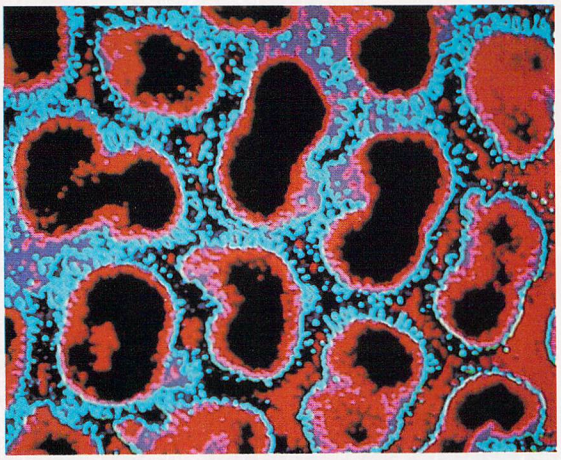
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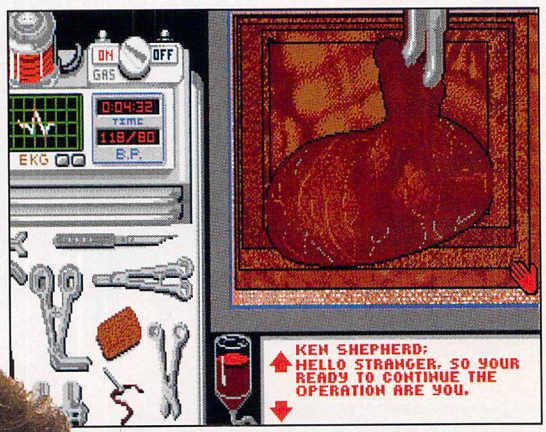
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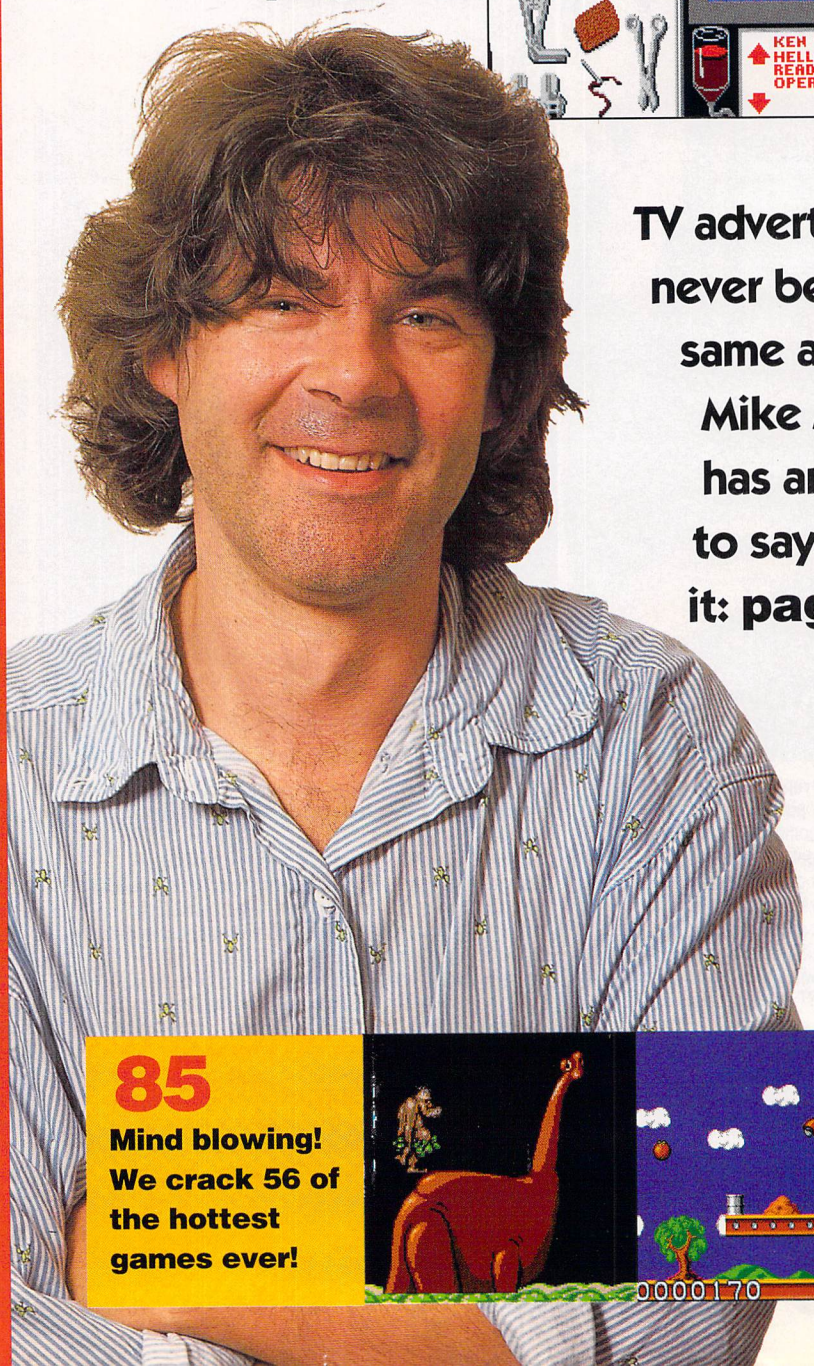


Protect your ST from attack. Your virus-bashing guide starts here (well, on page 30, actually)

Get down to the operating theatre for a *Life and Death* appendectomy: page 62



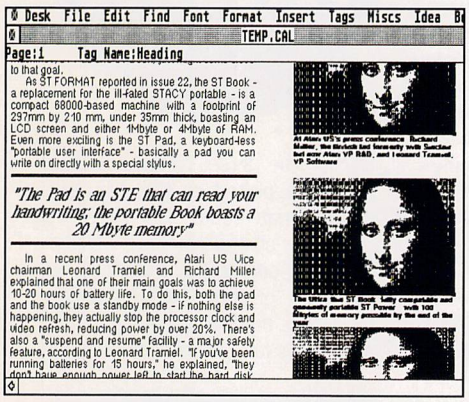
TV adverts will never be the same again if Mike Marchant has anything to say about it: page 94



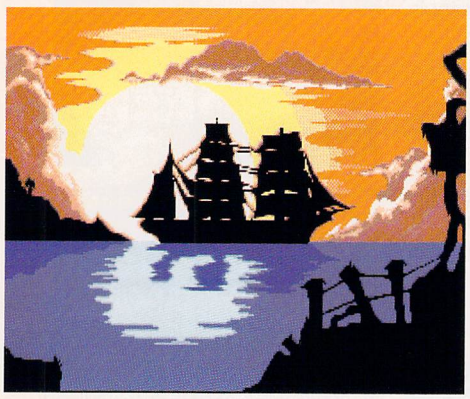
85
Mind blowing! We crack 56 of the hottest games ever!



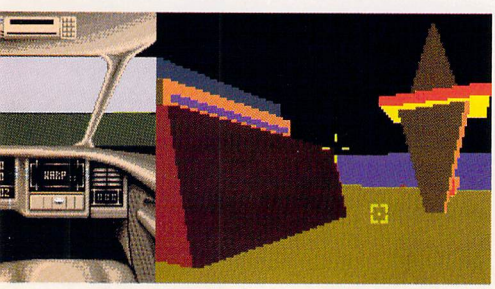
6 **Atari confirm that state-of-the-art CD technology is coming to the ST**



40 **Desktop Publishing just got simpler with the entrance of *Calligrapher***



82 **Delphine take a break from writing *Cruise for a Corpse* to pick their 20 all time classic games**



Contents

ST FORMAT ■ ISSUE 26 ■ SEPTEMBER 1991

FEATURES

Protect, detect and survive ...30
Seek out viruses, kill 'em dead and then protect your ST from further attack with our in-depth virus exposé

Not just a word processor 40
Calligrapher claims to be the ultimate combination of WP and DTP so we tested it out on some hefty tasks

Jeux sans frontières 82
Paris-based Delphine have written some of the finest adventure games ever. Now we discover what games they play during their time off

Breaking new ground 94
We discover how the ST is being used to create those super-trendy television adverts you can't help watching

On the cards 99
Get your business cards printed in a matter of minutes. We reveal the ST's secret money-making sideline

The September Quiz 136
Win a Supercharger Plus emulator or a whole set of professional animation packages from Condor Trading

REGULARS

News 6
We reveal Atari's secret plans for CD-I and the ST. Plus more exclusive stories than you can shake a stick at!

Game News 15
We take a look at US Gold's plans for the Christmas season. Is it going to be just coin-ops, licences and more coin-ops?

ST top 40 21
Ooh, I don't feel very well, doctor – everything just seems to be going up and down!

Cover Disk 26 22
Your guide to this month's playable *Magic Pockets* demo and all the other essential goodies on the sensational September Disk

Public Domain 47
The latest and greatest goodies on the PD scene are put under the *ST FORMAT* microscope

Gamebusters 85
This month we maliciously rip 56 top games apart to expose all the secret passwords lurking inside

Kandy Koloured... 100
Take a leaf out of Picasso's sketch pad and start creating your own ST visual masterpieces

Desktop 103
More of your technical troubles solved by our ever-helpful Technical wizard, plus more GFA queries answered in our programmer's surgery

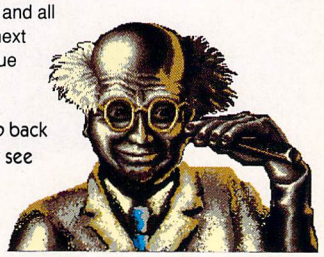
Subscriptions 110
The sun's beating down, your Coke's warm, it's too much effort to move – let us take the strain and deliver to your door

Special offers! 120
How you can get hold of *FORMAT* Gold winners and huge discounts in the *ST FORMAT* bargain basement

Education 124
Prepare your kids for the big wide world the fun way as we lift the lid on more new educational releases

Feedback 130
The liveliest letters pages in the whole Universe!

Twilight zone 138
Rumours, gossip and all that's coming in next month's *huge* issue



You played the demo of *Atomino* back in issue 24 – now see what we think of the full thing: **page 72**

SCREENPLAY

The planet's best ST games guide begins page **55**

Armour Geddon	64	*Impossamole*	77
Atomino	72	*Life and Death*	62
The Ball Game	77	*Maupiti Island*	69
Billiards 2 sim.	77	*Midwinter 2*	56
Creepy	77	*RBI 2*	70
F-15 2	67	*R-Type 2*	74
Frenetic	66	*Sharkey's Moll*	79
Games Summer	79	*Snott*	80
Hunter	60	*Switchblade 2*	74

screenplay extra 77

Cover Disk p 22

PURITY AND CHASTITY!

Clean up your ST with our exclusive *Ultimate Virus Killer* program...

and

Hang onto your trousers in this pocket-bulging playable demo of *Magic Pockets!*

plus *TT control panel ● the talking formatter ● Atari's fixes for TOS 1.4 ● CalShow automatic calendar/reminder program ● snowflake generator* ***and more***



Compact Disc–Interactive for the ST confirmed by Atari ● TT price cut in bid

Interactive CD unit gives ST 650MByte storage



■ The CD-ROM as an add-on data storage device wasn't well received for one basic reason: there wasn't a whole lot you could do with it. The new CD-I unit looks set to change all that, and games may never look the same again

by Andrew Hutchinson

ANOTHER *ST FORMAT* EXCLUSIVE

An add-on CD-I box for the entire ST range is currently being developed by Atari, *ST FORMAT* can exclusively reveal. The new interactive compact disc based ROM memory gives all ST users the power to access vast amounts of information at speeds previously possible only on big mainframe machines.

Last month *ST FORMAT* broke the news of Atari's brand new Falcon super-workstation with CD-I technology, and now Atari UK's Managing Director Bob Gleadow has confirmed to *FORMAT* that this technology is to be made available to all ST owners.

The technology can store as much as 650MBytes of information on a CD-like disc – over 800 times as much as the 800KBytes you can squeeze onto a single floppy disk – and the rate at which data is transferred from storage into memory is up to twice as fast as the best hard drive can manage.

The drives Atari will be using are Philips units. The Philips company has entered into a compatibility agreement with Japanese electronics giants Sony and Matsushita which means that a vast range of software should be made available for the unit. The controlling ST software will be different, but graphics and sound developed by any of the three companies can simply be placed on the disc with the approriate code.

Other companies have started producing compact disc technology, but most of them have produced their own hardware, meaning that software is far more time-consuming to produce and hence far less likely to appear in bulk.



■ Bob Gleadow, Managing Director of Atari UK, knows that the future lies in CD technology. That's no doubt why he's let the world know about Atari's own CD Interactive unit, coming soon

Atari are reluctant to reveal the release date of their new CD-I hardware. We do know, however, that the Falcon is to be released in mid-1992, and this seems like an appropriate time to launch the ST-CD-I unit as well.

Price too is a grey area. Atari are remaining tight-lipped, saying only that they will undercut the competition. The immediate competition is Commodore's CD-TV machine, which costs £650. Therefore a price of around £400 (for just a CD-I drive with some controlling software) seems likely for the CDI-ST machine.

Ain't that the truth

The things people say

● "Sam [Tramiel] can't believe the furore he's created from one tiny verbal slip. We like to tell the press about new products when they're ready for release, but you guys at *ST FORMAT* are pulling them out of us like teeth." Bob Gleadow of Atari, on last month's *FORMAT* exclusive Falcon story

● "How many Lynxes do you want – 10,000, 20,000? Whatever you want we can supply it. We've just switched production to a licensed factory just around the corner." Mr Gleadow again, commenting on reports in another computer magazine that since Atari's closure of their Taiwan factory there aren't any of their Lynx hand-held games modules being produced anywhere in the world

● "Riding high on the back of stormin' Norman, the Americans are having a whale of a time." Peter Staddon of Atari explains, in detail, the rationale behind the price rises on the ST range

TECH SPEC OF THE NEW ATARI CD-I DRIVE

Size: standard 12mm single-sided optical discs
Capacity: 650MBytes
Read speed: 170KBytes per second with constant linear velocity
Screen resolution normal: 384x280 pixels
Double screen resolution: 768x560 pixels
Picture quality: natural photographic pictures can be used. A full screen picture at normal resolution would occupy 105KBytes, so 6,340 of these pictures can be stored on one disc
Animation: usually limited by the rate at which data can be read. Here, assuming 12.5 frames/sec, there's about 14KBytes available for each picture in the sequence
Full motion video: CD-I players have four display planes, including a foreground cursor plane, two 8-bit image planes and a background plane. The encoding algorithm gives better than S-VHS quality running at 25 or 30 frames per second at full-screen resolution
Colours available at normal resolution: 16 million
Colours available with RGB 555 encoding method: 32,768
Effects: Cut, dissolve, granulation, blind, wipe, square
Text: this is held on disc as either characters or bit-mapped pictures
Audio: conventional CDs can be played. 72 minutes of music can be recorded on the disc. Alternatively, two stereo channels can play back Hi-fi music for 2.4 hours, four stereo channels can play back 4.8 FM hours of Mid-fi music or eight AM channels can play back 9.6 hours of speech

to win DTP market ● Brand new laser printer and Mega STE DTP bundle

STF COMMENT

At last we know that Atari are embracing CD-I technology. The company were slated for their ill-advised CD-ROM unit, the CDAR 505, but CD-I is a completely different ballgame. All the big players are producing CD-I machines: Sony, Apple and Commodore all have machines on the way.

CD-I technology opens up a whole new arena for game and productivity software innovation. Games can have real digitised backgrounds – and because of the massive data storage space, these can be smoothly animated to provide teeth-clenchingly realistic effects.

However, CD-I software needn't begin and end with games. Educational software for instance would be greatly improved if the images that children were dealing with were real, rather than computer simulated. For example, a world atlas could have real pictures of real landscapes. These landscapes could be interrogated by the users, so that cities, say, could be examined from an overall view of a country.

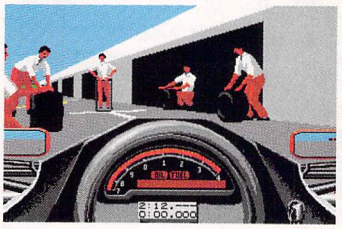
Pricing is, as always, of massive importance. Other companies have chosen to release their CD-I drives with a whole computer inside. Atari's decision to simply supply an add-on unit means that the cost needn't be prohibitive – need it, Atari?

Microprose get pole position

Having produced some of the finest simulators available for the ST – such as *F-19 Stealth Fighter*, *Midwinters 1* and *2*, *Tower of Babel*, *Gunship*, *M1 Tank Platoon* and *Rick Dangerous* – Microprose are turning their attention to the world of formula one motor racing.

***Grand Prix Simulator* is due to be released within the next three months. It enables the user to race against independently controlled cars in a full colour 3D world. Trips to the pits and multiple car pile-ups are just two of the attractions that Microprose reckon they can do better than anyone else.**





■ When is a racing game not just a racing game? Apparently when it's a *Grand Prix Simulator* from Microprose

Atari slash TT price, target DTP market

by Andrew Hutchinson

Atari are cutting the price of the TT by 10%. This brings the price of the basic TT down to just over £2,000, although obviously this is likely to be discounted once it gets to the dealers.

Bob Gleadow exclusively told *ST FORMAT* that the price cut was a shot across the bows of Apple: "We're going after the document processing market, or more particularly Apple. The price cut will happen at about the time that Signa Publishing release the colour version of *Calamus* [the top-end DTP package], so we'll have an excellent platform on which to build a document processing market."

"We're going after the document processing market" – Bob Gleadow, Managing Director, Atari UK

The price cut will also happen at the same time as the Mega STE is shipped to dealers – within the next month. To bolster this DTP initiative, Atari are working on a brand new bundle based on the Mega STE and including, Gleadow hopes, an earlier version of *Calamus*. Mike Dale of Signa told *FORMAT* that while Gleadow had mentioned the subject to him he "hotly denied" that any agreement had been entered into.

Gleadow also revealed that the company are releasing a brand new laser printer, the SL 406. This four page a minute engine is to be released to work alongside the Mega STE and the TT. It is intended as a direct rival to Apple's LC computer and Laserwriter 2 setup.

Enough quality ST DTP software is already in place to make this assault on the market viable. *FORMAT* revealed in issue 23 that leading DTP packages *Proxima*, *Pagestream* and *Calamus* are all receiving major updates, so Atari have timed the move well. (If you missed *STF*'s exclusive report, see our back issues offer, page 110.)

The Mega STE's built in networking facilities make it the perfect cost-effective engine for document processing. It has Appletalk and PC hardware networking capabilities built in, so there wouldn't be a problem with running, say, a Mega STE in an Apple network.



■ You'll soon be able to pick up a TT for under £2,000. So if you've just cashed in your electricity shares, why not try sampling a bit of 32-bit power-processing?



■ Or if your pocket won't run to £2,000, try a Mega STE. Atari are considering bundling it with a top-flight DTP package. Watch this space!

HEARD ANY GOOD NEWS?

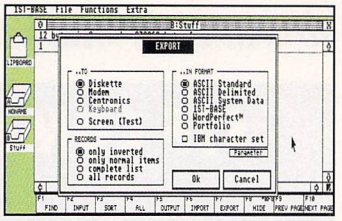
Then why not share it? If you have any ST news for us, write to Andrew Hutchinson, News Editor, *ST FORMAT*, 30 Monmouth Street, Bath, Avon BA1 2BW – or if you have access to the CompuServe network, leave a message for *ST FORMAT*, User ID 100012,2571. Leads can be treated in strictest confidence if you wish, and we do pay for good stories.

Be damned *and* publish

After updated versions of *Proxima, Pagestream* and *Calamus* (as reported in *STF* 23), another high-end DTP package is ready for release. *Saxon Publisher* is distributed by Surface UK (☎ 081 566 6677) at £199.95. This includes *Saxon Script Professional*, which you can buy on its own for £99.95.

Minimum requirements for this package are 1MByte of memory and two disk drives. Features include:

- Support for all Postscript downloadable fonts, including Compugraphic, Adobe type 1 and 3, *Pagestream* and Agfa Compugraphic
- Custom utilties to convert Postscript fonts to *Saxon Publisher* format
- Display of Adobe Type 1 fonts on screen
- Standard fonts include: Avant Garde, Bookman, Century Schoolbook, Courier, Helvetica, Palatino, Times, Zapf Chancery and Zapf Dingbats
- Automatic hyphenation
- Alignment tabs
- Multi-page preview
- Metric and points/picas support
- Apex colour separation
- Full dot matrix support
- Print Postscript files from other sources
- Specify colours as differing percentages of yellow, cyan, magenta and black inks
- True Postscript screen preview
- Moiré testing module
- Ink impurity recognition
- Convert Postscript files into IFF or EPS images
- View EPS files on-screen



■ **Who wouldn't welcome relational databases which don't take up much RAM space? *1st-Base* is a brand new German program which looks set to give *Dbase* et al a run for their money**

The friendliest database ever?

The trouble with most databases is that the closest they come to user-friendliness is the thank you message on the guarantee slip. Then there's software companies' overwhelming desire to produce as much business gobbledegook as possible, all in the aid of impressing business users.

Victor GmbH have written a new "relational" database. This means that rather than using numbers to cross reference different entries, the database uses sophisticated search facilities based on the fact that each card is unique.

The database, *1st-Base,* can be run as either a stand-alone program or a Desk Accessory and takes up under 100K of RAM space – so 520 ST owners can for the first time make optimum use of a database.

***1st-Base* uses an extremely flexible card format which you can re-design using the mouse. An entry card can look just the way you want it, with just the right room for each field. What's more, an easy-to-use BASIC-like language enables you to create sophisticated reports with the minimum of fuss.**

One of the most powerful features is the import/export function. A wide variety of formats (such as *Dbase)* is supported, but the database goes one step further. Since it can be run as an Accessory, the package can replay a record into any GEM-based program just as if you were typing it. Also in the program is a terminal program for data transfer via a modem.

***1st-Base* runs on any ST/STE/TT in either medium or high resolution and costs £98. While Victorsoft are currently looking for a British distributor, the program and its sister package *1st-Address* are available direct from the company at PO Box 1510, D-2058 Lauenburg, Germany, ☎ 01049 4153 52323.**

3,000% improvement on your maths

Adding their own weight to the pile of hardware add-on boards emerging for the ST, TC Developments have announced the release of a 68881 maths coprocessor board for the ST range.

The board has a 24MHz clock speed, which means that trigonometric and logarithmic functions can be performed about 3,000% more quickly – that is, 30 times faster. What it won't do is speed up your games; the board's main use would be for programs which do some intense arithmetic such as CAD software. *DynaCADD,* the extremely expensive computer aided design program, supports just such a co-processor.

TC also have programmers' libraries available from Prospero and Hisoft for their C packages so that you can write your own code to support the board if you are that way inclined.

No matter which ST you own, you don't have to do any soldering. The board simply slots straight onto the PCB in a spare socket. Cost is £189.95. Telephone or fax TC Developments on ☎ 0937 581145.



CRUISIN' IN

***Cruise for a Corpse* is nearly ready, honest. Delphine are just putting the finishing touches to their new 1920s whodunnit graphic adventure. They're currently converting the text from French to English, so don't miss our review next issue, out 12 September – in English, or as close as we can manage...**

£25 OF SOFTWARE *FREE* PLUS EXCLUSIVE SPECIAL OFFERS LIKE £9 OFF *MIDWINTER 2* – TURN TO PAGE 110 NOW

Who's better, who's best?

You all know that *ST FORMAT* is the best selling magazine for the ST in the country. You all know that's because we're the best magazine for the ST in the country. It seems that more and more ST users agree, according to the latest circulation figures released by the independent Audit Bureau of Circulations. They show that in the period January to June 1991 *ST FORMAT* sold an average 70,256 copies every month – a whopping *75%* more than any other ST magazine.

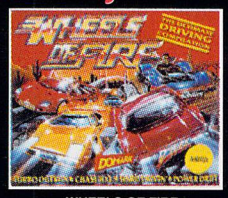
The new ABC figure represents a dazzling 27% increase in circulation over the previous six months. Recession or no recession, *STF* just goes from strength to strength!

Steve Carey, *ST FORMAT'S* publisher, had these thoughts: "I'm absolutely delighted. This is the biggest increase in sales we've ever had, and the great news for every ST owner is that it proves ST sales are growing all the time. That means more support from software houses, and that means more choice for ST users. And that, of course, means more reasons to buy an ST!"

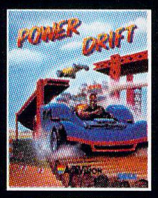
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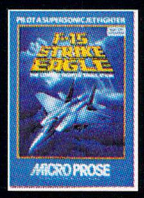
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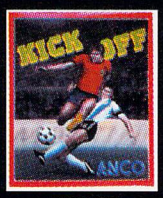

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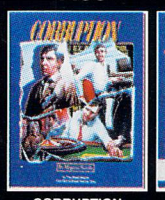

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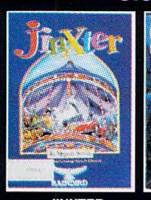

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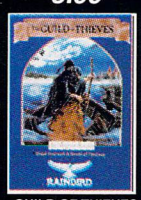

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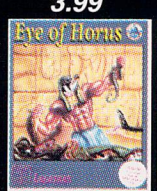
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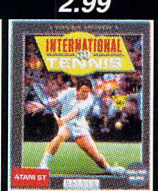

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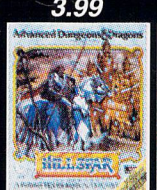

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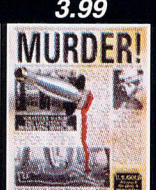

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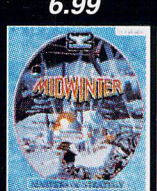

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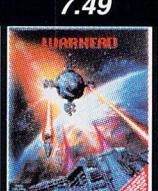

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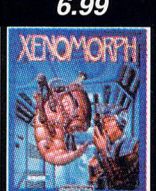

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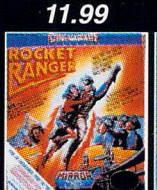

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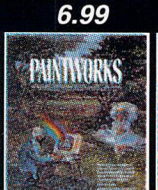

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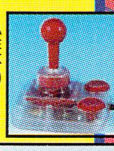

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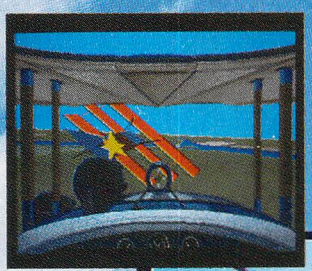
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- Action dogfight, solo, and team missions for one or two players using a single computer with any combination of keyboard, joystick, or mouse.
- Strategy Dogfight: For the skilled purist, Blue Max acts like a highly-intelligent strategic board game, allowing you and your opponent to work out detailed battle sequences and play back the moves in "realtime" 3D.
- 8 airplanes to choose from, each with its own highly-detailed flying characteristics.
- Perform missions with, as, or against the Aces of the Great War.
- Dozens of historical missions around 4 different locations within France.



VGA color air combat sequence



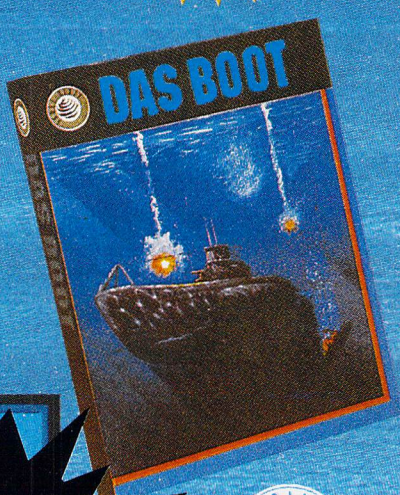
Strategy mode split screen with 3D Hexboard

• VGA 256 3D COLOR GRAPHICS,
• ORIGINAL MUSIC, SOUND EFFECTS FOR GAME BLASTER, ADLIB SYNTHESIZER CARDS

DAS BOOT

GERMAN U-BOAT SIMULATION

Do you think well under pressure? How about 300 pounds per square inch of pressure? Take a deep breath, captain....



Winter, 1941. The icy waters of the North Atlantic. The deeper you dive, the greater the pressure. Depth charges explode around you, banging on the hull of your U-boat like iron fists. Nerve and cunning make you the terror of the Allied convoys.

- 3D submarine warfare: For the first time, a sub warfare game lets you deal with threats below *and* above the surface in a true three dimensional environment.
- Real communications: Use the German Enigma coding machine to send and receive information.
- Many missions to choose from—into the North Atlantic and Arctic, inland along the coast of Norway, into the Bay of Biscay, and through the Straits of Gibralter.
- 3 different levels of difficulty, from beginner to realistic.
- 3D graphics in 256 VGA colors, with multiple internal *and* external camera views in a complete 3D world.



VGA periscope view of enemy aircraft

VGA 256 color mine field under North Atlantic

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Ster, ster, stereo sampling, again

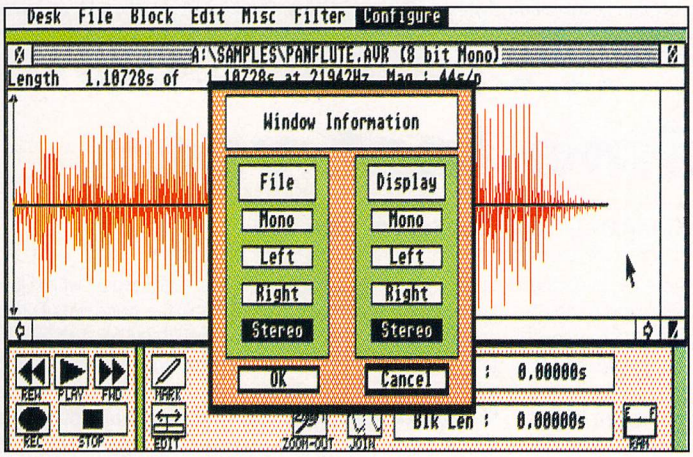
The sampling market continues to show massive growth, with innovative new goodies being released by the day. The latest package is Microdeal's Stereo Replay sampler, produced by those techno-boffins at Audio Visual Reserach.

The unit contains dual analog to digital and digital to analog convertors running in 8 bits. Twin phono input and output sockets on the side of the cartridge mean it can receive to and from a hi-fi.

The stereo editing software provided enables samples to be loaded into memory and edited separately. These can be loaded in either 8, 12 or 16-bit resolutions, in mono or stereo, and converted up or down in resolution – so you can take a cutting from a 16-bit mono sample and edit it into a stereo 8-bit sample.

All of the AVR's sample editing and effect functions are in the software, including channel cross fade, sample pan, loop cross-fade. Digital effects can be added to the sample and controlled from a MIDI keyboard or sequencer. A new program, *Stereo Beat,* enables you to load kits of up to 15 different samples into memory, then output in stereo – so in effect you can sample a track and completely re-mix it.

■ Stereo Replay costs £89.95 from Microdeal, PO Box 68, St Austell, Cornwall PL25 4YB ☎ 0726 69692.



■ **Nifty software and state-of-the-art hardware: *Stereo Replay* from Microdeal is the second stereo sampler to appear for the ST in as many months**

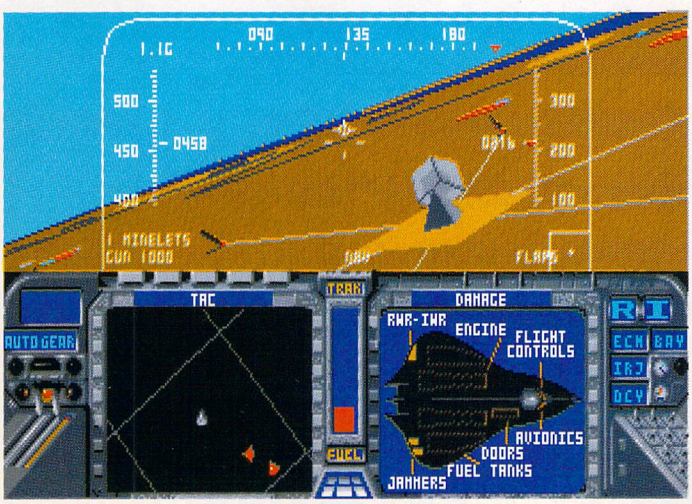
Fa.ster hard drives

Silica Systems have upgraded their popular ICD FA.ST 40 hard drive. The unit is now 50MBytes, but the price stays at £569. The ICD drives are some of the best around, and the software particularly is extremely well featured.

■ Andy Leaning of Silica also told *ST FORMAT* that ICD have launched an AdSCSI Plus unit for all STs. This converts DMA to a SCSI interface, enabling you to connect up to eight SCSI devices – like hard drives or laser printers – to your ST at once. AdSCSI Plus comes complete with a real time clock and costs £99.95.

■ *MegaPaint 2* has just been upgraded to version 3. This release boasts faster operation and enhanced features such as keyboard shortcuts for block handling, new file formats, better block and grid handling and more English style menu layouts. Upgrade to the new version costs £44.95, or you can buy it on its own for £99.95.

■ Silica Systems ☎ 081 309 1111.



■ **Buy a monitor and get a game free. Philips are bundling *F-19 Stealth Fighter* from Microprose with every CM8833 monitor they flog**

Fly away a monitor

Philips have lined up a very interesting promotion to help along sales of their best selling CM8833/II monitor (they reckon they've flogged 100,000 of them). They're bundling it with a copy of *F-19 Stealth Fighter* from Microprose, the chart-topping flight sim which earned a massive 96% way back in *STF* 12.

To accompany the promotion, purchasers also get the chance to enter a competition to pilot a Boeing 737 flight simulator for a day plus lunch at a five-star hotel and enjoy a trip in a helicopter.

WHISPERS

ST news from here and there

■ Developers of cartridges can now control EPROM hardware from a Z80 cross assembler. D&S Software are selling the software which enables the programmer to send initialisation command strings directly to ROM programming hardware. The software also includes conditional assembly, which is useful for debugging programs. Contact D&S Software, P.O.Box 908, Newport Pagnell, Bucks MK16 8YJ ☎ 0908 615104

■ The problem with having such an excellent range of resolutions on the ST is that you need two monitors to get the most out of your machine. As a result, monochrome emulators have emerged which enable colour monitors to display high resolution graphics. The *Moriaty Monulator* can show all 256,000 hi-res pixels on-screen at once and is compatible with all ST hardware and TOS versions. The program is 80% faster than Public Domain emulators and includes a special scan mode which yields a 30% increase in speed. It's £19.95 from Moriaty Software, 55 Burns Road, Pound Hill, Crawley, W. Sussex RH10 3AT ☎ 0293 539215.

■ *Cubeat,* the cheaper entry-level version of the music sequencing package *Cubase,* is now running at version two. This version includes a Drum Edit page. This enables you to create drum rhythms from within *Cubeat* and then download them to a drum machine for playback, a process which is a sight easier than squinting into a tiny LCD window. New drivers and M*ROS *(Cubase's* multi-tasking environment) have also been included. Contact Evenlode Soundworks at The Studio, Church Street, Stonesfield, Oxford OX7 2PS ☎ 0993 898484.

■ Paladin Productions are a company specialising in voice libraries for the EVS-1 sythnesizer for the ST. Evolution Soundworks, who produce the EVS-1, are in difficulties at the moment and have put all development projects on hold, including new voice libraries. Paladin have produced a range of 100 voice groups for the EVS-1 at £14.95 a go. Contact Paladin Productions at Field House, 7 West Terrace, Great Ayton, Middlesborough, Cleveland TS9 6PA.

■ "Hands On" MIDI Software have got a major new release lined up. This music specialist company are releasing an "all singing, all dancing MIDI Jukebox player." Release will be after Christmas and Hands On told *ST FORMAT* that it'll definitely be under £100. The guys are currently in the process of rewriting their entire MIDI sequences library to keep them in line with the new MIDI standard established in Germany six months ago (for details see the News pages in *ST FORMAT* 22).

■ Expressworks may have the solution to your TT monitor hassles. The company can supply the high quality cable you need to connect an EIZO Flexscan monitor to a TT. The lead costs £49.95, and Expressworks can be reached on ☎ 0252 726255.

New, advanced, fresh, latest, up-to-date *Protext*

Version 5.5 of *Protext* is nearly ready for release from Arnor Limited.

This top word processor has been upgraded to include a 43,000 word thesaurus which can produce up to 827,000 different responses. This addition is designed to complement the Collins Linguibase dictionary already included with *Protext*.

Other new features include: automatic hypenation, widow and orphan elimination (which isn't as grisly as it sounds), analysis of text by word occurrence and mail merging to *Prodata*. The programs runs on any ST/STe/TT with at least 1MByte of memory.

Arnor are planning to release the upgrade by the time you read this. Price is £152.75, with upgrade from version 5 for £30 or from version 4.2 or 4.3 for £60. Contact Arnor Ltd ☎ 0733 68909.

This time last year

What was making news exactly one year ago

■ *DeluxePaint ST*, the best art package ever to hit the ST, finally arrived. The £50 package, universally known as *DPaint*, was packed full of professional features such as nine drawing modes, four fills, controllable bezier curves, 16 fonts and a mulitple animation window. One year on, it's about the only art package you see in use by the professionals in the software houses.

■ Meanwhile, one of the best word processors ever, *Protext* v5, was released by Arnor and promptly received rave reviews. We liked it so much that it's the WP package the *ST FORMAT* team choose to write all their reviews on.

■ The British Music Fair was taking place at the largest deodorant test-bed in the world, Olympia. Sound Technology were demonstrating their Sound Tools hard drive recording system for the first time, while just around the corner and at under half the price was D2D's hard drive sample, the ADAS hard drive recording system. One year on, the prices of these units – then £2,000 and £1,000 respectively – are still dropping and they're picking up more users, all of which adds weight to the argument that this has to be the recording technology of the future.

■ On the games front, *Magic Fly* from Electronic Arts was making a big impression on the admittedly impressionable Mark Higham. (He's much better now, thanks.) The game was given a coveted (whatever happen to "thou shalt not covet"?) *FORMAT* Gold. However, it didn't do terribly well in terms of sales and there's been absolutely no mention of a sequel.

ALL CHANGE

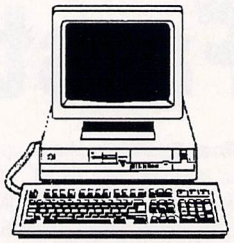
Little known fact, this: *STF's* April issue, number 21, actually sold as many as 72,500 copies. That was the issue with the free Buyer's Guide attached to it, which suggests to us that you enjoy reading supplements. If so, you won't want to miss next month's issue, number 27, out on Thursday 12 September – it will include a brand new Buyer's Guide supplement, crammed to the hilt (if supplements have hilts) with up-to-date information on ST hardware and software.

Apart from the supplement attached to our next issue, you'll also notice some other big changes. *ST FORMAT* is going up in size, in more ways than one. We're getting bigger and better, giving us more room for the kind of ST information you want. To make sure you don't miss out, turn to page 110 for details of how to subscribe. And remember: if you only read one magazine this year, you don't get down to the newsagent's often enough.

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GODS

THE BITMAP BROTHERS



"Spankworthy"

Paul Ledbury – Oxon (Registered God)

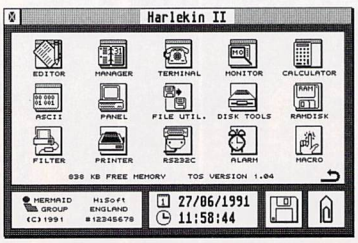
Have you got what he's got ?

C1, Metropolitan Wharf, Wapping Wall, London E1 9SS
© 1991 The Bitmap Brothers. Published by Renegade

HARLEKIN 2

- your dreams can come true

Harlekin 2 is a unique collection of utilities and applications for your Atari ST and TT computers. All programs are available from a single desk accessory, providing maximum convenience while taking up only one slot on the Desk menu:



- *complete editor with search and replace, block-marking with the mouse, external clipboard with cut copy and paste, full page setup options for printing, word wrap and more.*
- *extremely powerful appointment diary/calendar/ideas organiser called the Manager. This allows you to make notes of any size and assign dates, times, priorities, icons and alarms to them. Then print out your notes by day, month, year etc. for a complete time management system.*
- *dynamic printer spooler that takes just as much memory as it needs, comprehensive printer filter.*
- *full macro processor allowing keyboard shortcuts for Harlekin's modules and extensive keyboard macros, all totally under your control.*
- *communications package allowing X-Modem and Y-Modem protocols plus full modem set up and an extensive dial directory.*
- *many, many more utilities too numerous to mention in this small space, plus a 150-page, wire-bound manual.*

Harlekin 2 is available now at a price of £59.95 inclusive. Upgrades from version 1 cost £24.95; just send your master disk back to HiSoft, together with your remittance.

HighSpeed Pascal 1.13

Version 1.13 of this new, already immensely popular compiler is now available. Additional features are:

- *inline assembler*
- *help desk accessory*
- *i/o-mapped maths co-processor support*
- *faster, improved editor*
- *more compact libraries*
- *absolute-address variables*

Upgrades from earlier versions cost £7.50 inclusive, or £2.50 from version 1.1.

For those not in the know, HighSpeed Pascal comes from Denmark, is extremely fast and friendly to use and is very closely compatible to the immensely popular Turbo Pascal on the PC, even including the graphics unit from the PC.

Compilation speed is roughly 20,000 lines per minute with excellent code generation for the ST and the TT.

ProFlight 1.2

We are pleased to announce the release of version 1.2 of ProFlight, our immensely popular Tornado flight simulator, loved by reviewers and users alike.

This new version of our Tornado flight simulator includes improved colour graphics, the ability to save your cockpit set-up, a pause key, more control over the view angle and the view angle and more ... it even works on the TT!

Registered users can upgrade by sending their master disk back, together with £2.50.

HiSoft C

The ideal way to learn the difficult C language is with an interpreter and HiSoft C for the ST has all you need:

- *try out your new C programs quickly and easily*
- *interactive editor with on-line help*
- *debugger with single-step*
- *extensive GEM toolbox*
- *complete manual with C tutorial*

HiSoft C is already widely used and has been well received by its users and reviewers alike.

So take the hassle out of C language and learn the everybody's talking about.

When you're ready, move up to Lattice C 5.

Your FirST BASIC

the official guide

The comprehensive reference guide and tutorial to the popular FirST BASIC package which is supplied with your new Atari ST computer.

- *Full command reference for FirST BASIC*
- *Extensive tutorial, guiding you through using BASIC from first principles. Includes many examples plus how to use GEM*
- *Detailed descriptions of all the GEM and other operating system libraries supplied with FirST BASIC*
- *Concepts chapter which explains, in easy-to-understand language, the modern, structured aspects of FirST BASIC*
- *Many technical appendices giving a fascinating insight into the workings of the Atari ST*

Use the order form to obtain Your FirST BASIC and we'll include a free mouse mat printed with the ST ASCII character set, completely free of charge.

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P.S. BASIC 2 and Devpac 3 are still under development - more news next month ...

Previews

Have you heard the one about the dog, the cabbage and the bowl of soup? If you have, send it in to the "I Am a Gullible Fool" competition at the usual address. Meanwhile have a butcher's at Previews

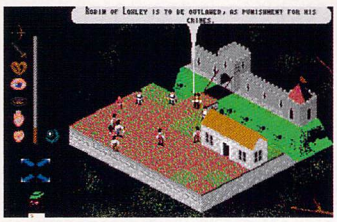
IN PRODUCTION

■ ***Lotus Esprit Turbo Challenge,*** the immensely popular driving game of last year, is set to be followed by what Gremlin hope will be an even better sim. Imaginatively titled ***Lotus Turbo Challenge,*** it's intended to be the definitive race sim. The change of name comes about because you can now drive a Lotus Elan as well as the Esprit. Four players can take part and different weather conditions are included. Perhaps the third game in the series, when it comes, will just be called *Lotus Turbo?*

■ American company Cinemaware have been more prominent in their native country than over here, and the few releases they have put out on the ST have been somewhat variable in quality. This situation may change now that Mirrorsoft have bought the name, with titles being developed by the founder of Cinemaware's new company, Acme Interactive Inc (snazzy name). Upcoming releases include ***Rollerbabes, TV Sports Boxing*** and ***TV Sports Baseball.***

■ On the US Gold front (see main story), also watch out for ***Shadow Sorceror,*** due even as you breathe. It's another 3D isometric game, but this time an AD&D non-role-playing adventure. This means that it's not intended for those fantasy fans who know every *Dungeons and Dragons* rule by heart, but rather for the casual adventure fan who has a leaning towards this sort of game. A bit later on, in January, look for a game provisionally being called ***Greyhawk,*** which is being promised as a possible *Eye of the Beholder* for the ST. *(EOB,* by the way, was an immensely wonderful *Dungeon Master* clone on that certain other machine with nothing else to boast about.)

■ More releases are coming from Microprose, though not till the beginning of next year. ***Covert Action*** is "a realistic contemporary spy simulation," full of drug smuggling, espionage, phone tapping and – yes! – international intrigue. Trail suspects around the world! Break codes! Plant bugs! Bug plants! And so on. The other newie is ***Knights of the Sky,*** a World War One aerial combat flight sim. The period setting is important 'cos you don't have luxuries such as a navigational computer – you have to use roads, rivers and suchlike to find your way, just as the real pilots did. As the war goes on, flight technology progresses and your plane improves, making your job a little bit easier. It's certainly a man's life in the simulated army!



■ ***Robin Hood*** not riding through the glen, with no band of men... I dunno, nothing seems the same any more

USG 4 ST, OK?

In the adventure games department, US Gold seem to have been neglecting the ST of late. Now, though, they have seen the light and announced a flood of games under development, licensed and otherwise. Just take a look at the line-up they've got – er, lined up for the forthcoming months.

With Kevin Costner currently prancing about in green tights pretending to be British, the time is ripe for a Robby Hood game. USG think the same, and they're quite probably going for The Most Extravagant Claim in a Press Release Award – they reckon the real-time adventure system they're using took seven years to develop. No comment. The game's a blend of action and adventure (bit of a radical move, that) with an isometric 3D view and plenty of characters, with whom you can interact using icons and speech bubbles. Set a place for Mr Hood sometime in the coming month.

■ Why do arcade games, particularly conversions, even bother to have plots? They're so inane and pathetic and no one bothers with them anyway. Take the storyline to *Alien Storm,* US Gold's forthcoming conversion of Sega's coin-op. After ruining their planet through lack of environmental awareness ("Our planet is dying, earthling," etc), this bunch of aliens are looking around for another place to stay, see? So they come to Earth and hide in everyday objects such as streetlamps and dustbins. Luckily, three vigilant earthlings – Gordon, Karla and Scooter (on their day off from Sesame Street, no doubt)... oh, who cares? All you have to do is blast the geeks out of existence over three stages with six missions.

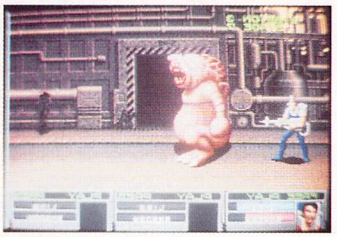
First there's a slow scrolling fight scene set in the street with various bits of furniture coming alive and attacking you (vicious Keep Left signs, indeed), followed by a 3D bit where you, erm, shoot some more aliens, and then a fast scrolling running section in which you stop the aliens reaching their mothership, quite probably by shooting them. So as you can see, the plot really does have a major part to play in you shooting lots of aliens repeatedly.

That aside, from the demo *Alien Storm* looks quite competent, particularly in the graphics department. The aliens are nice and slimy and suitably repellent, though of course they won't match the coin-op graphics. Watch for the full *STF* review.

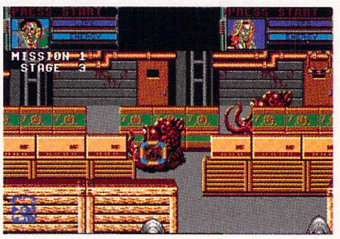
■ Creative Materials is the name of the programming team handling the conversion of Capcom's coin-op *Final Fight* for the ST. The coin-op has over 4MBytes of RAM for graphics alone and uses thousands of background characters, each with its own palette. Surprisingly, the sprites themselves only have 16 colours. Even so, converting such a huge amount of data from a dedicated machine to the humble ST (and eventually even the Spectrum!) wasn't an easy job. The man responsible for the ST version is Richard Alpin, whose previous credits include *Line of Fire* – but don't let that put you off. The results of all this porting and squeezing should be hitting your ST very soon. No more feeling neglected, that's for sure!



■ The huge macho superhero employs the new battle tactic of Hiding Behind His Gun Until the Monsters Go Away, while his female counterpart nips into the chemist for some Valium to calm herself amid the *Alien Storm*



■ And here's a coin-op shot of *Alien Storm* we prepared earlier. As you can see, the ST shots are darn close to the real thing, except possibly for the colours – and the scrolling – and the sprites – and the backgrounds...



■ In an old abandoned warehouse at the edge of town, we find Gordon (or is it Scooter?) and Karla besieged by huge lumps of hideous jelly. Good job Karla visited that chemist a while back

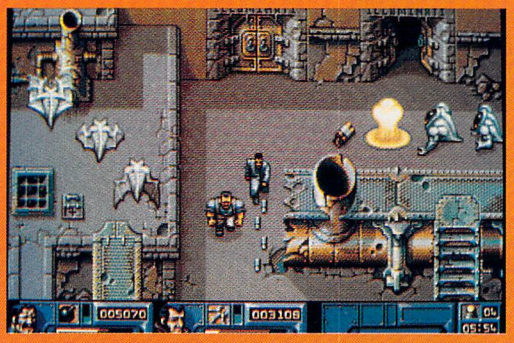
TO THE BITMAPS, A SON

Like 'em or loathe 'em, the Bitmaps aren't going to go away, because they've plenty of games in the well-used pipeline just waiting to jump out on a quivering world. The first should be *Magic Pockets.* If you've had a look at this month's Cover Disk demo (and if not, why not?) you know just what a playable game it looks like being.

It features (ahem) the Bitmap Kid, a sickeningly trendy breed of brat who wears shades and a baseball cap. Streetwise he may be but he still likes his toys, so when they get lost in the depths of his eponymous pockets he's less than happy. The only thing to do is enter the world of the *Magic Pockets* and reclaim the playthings.

The game is platform-based and is spread over four levels representing a jungle, a lake, a mountain and a cave. It's a collect-the-tokens, kill-the-monsters and find-the-bonuses affair, but it's the style of the monsters and weapons which promises to lift it from the usual morass of such games. In each level, the weapons available differ, so in the jungle level you throw clouds which burst and cause plants to grow, which are then used as platforms; and in the cave level you use hurricanes to trap the monsters, jump on them and gain bonuses. The amount of bonus collected varies according to several quite complex conditions, and working out how these operate is half the fun of the game. There are also other objects around to boost your weaponry, ranging from boxing gloves and pneumatic drills to laser helmets and Bitmap shades. Somewhere in each level there's a special toy to collect before you exit the level, such as the bicycle you must race to ride before one of the monsters gets it.

Graphics are being handled by Mark Coleman, who also "did" *Xenon 2, Speedball* and *Gods,* though they're radically different from the style of those games, and of course the much-vaunted music is by Betty Boo. However the game finally turns out, it definitely seems to have that vital spark of playability, though of course you should cast a discerning eye over our review before shelling out.



■ It's a little known fact, but all major heroes in the Victorian Era were equipped with whacking great Bitmap Portable Rocket Launchers, specifically designed to wipe out *Chaos Engines* and enemies of the Empire

■ Also on the boil and due in November is *The Chaos Engine.* We're back in Victorian England and a massive global catastrophe has taken place. In a rambling country house, once owned by the "crazed" inventor Baron Fortesque (nice chap, a bit misguided), there lurks the Chaos Engine, spewing out chaotic emanations and threatening to destroy Life As We Know It – ooer. Of course, there's always someone fool enough to try and destroy the machine, and it should come as no surprise to find that you're one of them – or rather three of them because you control three characters at a time, all of which behave according to their own personalities. There are four levels full of the usual evildoers and monsters between you and the Machine in this eight-way scrolling blast, seen from above in a very *Gauntlet*-esque way.

Renegade are making much of the fact that each character has its own set of abilities which may be altered and improved through good gameplay, and they hope to push the game very much as a role-playing arcade game rather than as a straight shoot-'em-up. At the rate they're going, the Bitmap Brothers will soon be a Bitmap Family.



■ The Bitmap Kid, having binged on Bitmap Bubblegum, goes into a Bitmap Bombing Tumble and wipes out the Bitmap Monsters. (And don't forget to get your Bitmap T-shirts, shades, baseball caps, *Magic Pockets* and little rubber dolls in the foyer)

NEW FROM THE ZOO



■ "I'm *not* cross-eyed! I've just got a slight squint, that's all! And anyway I'm bigger than you, Mr *Son of Zeus,* so the minute I catch you you'll have some very unpleasant dealings with a pineapple and a glass of milk to tell your grandchildren about!"

Zeus! "Bless you." No, no, Zeus, the Greek god. Or to be more precise, *Son of Zeus.* That's your character in this game. See, your Dad has been trapped on Mount Olympus by some bloke called Kaos. He's broken this Artifact thing, which has the secret of the powers of the gods, into 12 pieces and because you're still quite junior and do a bit of everything really, it's up to you to recover these pieces and restore order to the world in general.

Sounds familiar, dunnit. The game will be your average beat-'em-up with some searching and adventuring, but the Zoo are placing great emphasis on the size and animation of the sprites, combining the massive but static sprites you normally see at the end of a level with the sort of animation you see with in-game sprites. Another neglected aspect of most ST games, the sound effects, are promised to be above average, with samples being used throughout the game instead of just during the intro sequence.

Son of Zeus is being handled by a programming team who go by the name of Aeon Designs, who don't exactly have a string of hits behind them, their only previous work together being (ahem) a London Underground simulation. Perhaps this will be their first major release – or then again, perhaps not. We'll see next month when the game is released and we give it our customary thorough seeing-to (ooer).

Also on the way from the Zoo (as close friends and pretentious journos like to call them) is a shoot-'em-up by the name of *Cardiacs,* and no, we don't know why. They describe it as *"Defender* but unlike *Defender,"* which, er, isn't really true, because it does look remarkably like *Defender.* It's a horizontally-scrolling shoot-'em-up and um, that's about it. But it is very fast, scrolls both ways and has an end-of-level guardian, as well as some wicked samples (mainly from Arnie films) along the lines of "I'll be back" and all the rest of those oft-quoted bits.

The Magic Garden features – well, let's be frank, a gnome, which explains why the *FORMAT* office has been flooded with the little beggars lately. This gnome has been trapped in a garden by the King, who won't let him out until he's made the garden into something really soooper. So the game involves tending flowers, digging up weeds, stopping pests and such woolly-jumper stuff. Sounds impossibly twee and silly? Well, yes, but then the concept of *Lemmings* isn't exactly OU material.

Finally, there's *Under Pressure,* another shoot-'em-up whose main character bears an uncanny resemblance to those Walkers in "The Empire Strikes Back." Not much to say about this either, except it's got some colourful displays and doesn't include the David Bowie/Queen music (it was too expensive). ***stf***

KEEP IT IN THE FAMILIES

■ *Mega Twins,* another US Gold licence from Capcom, features the eponymous pair on a quest to avenge the massacre of their entire country by some unthinking brute in their tender childhood. It's one of them arcade games where you shoot things, over six levels, from forests to underwater to flying through the air. Also coming from USG is *The Bonanza Bros,* featuring (oh dear) Mobo and Robo Bonanza, reformed villains hired to test a TV celebrity's security at his business premises. Weird? Sounds it. The shots look fairly similar to the old *Spy vs Spy* games, with a split screen display and each character acting independently. Watch for these very soon.

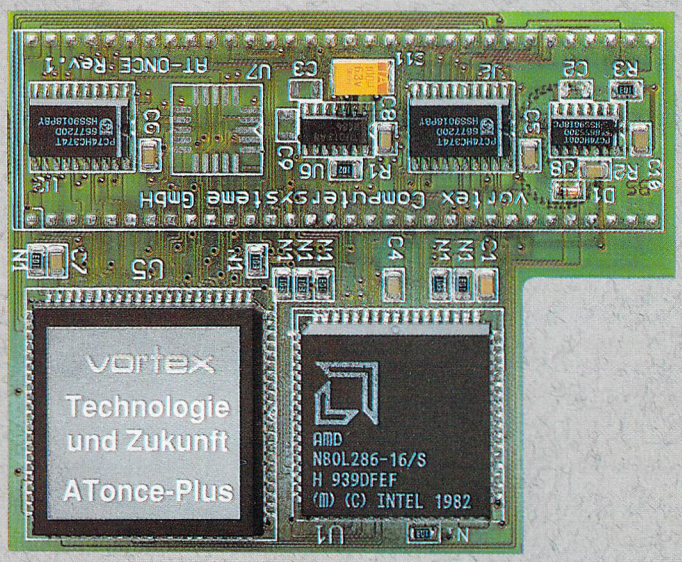


■ As one *Bonanza Brother* arrives at the office (but unfortunately forgets to leave his truck in the process) the other one has obviously startled that centipede type affair midscreen...

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16 MHZ 80286 CPU

vortex ATonce-Plus is based on the standard AT microprocessor.

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It is developed and produced in Germany by vortex Computersysteme GmbH.

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- For further information or the update-service, please contact your local Atari dealer or call Compuserve Box # 100015,330

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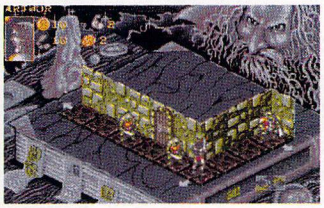
ST charts

1	▲	**HERO QUEST**	Gremlin Graphics	£25.99	*STF* 24: 78%
2	◆◆	**LEMMINGS**	Psygnosis	£25.55	*STF* 24: 94%
3	NE	**PRO TENNIS TOUR 2**	UBI Soft	£24.99	*STF* 24: 73%
4	◆◆	**ARMOUR GEDDON**	Psygnosis	£25.99	*STF* 26: 86%
5	▼	**GODS**	Mindscape	£25.53	*STF* 22: 92%
6	▲	**WAR ZONE**	Core Design	£20.99	*STF* : 76%
7	▲	**3D CONSTRUCTION KIT**	Domark	£39.99	*STF* 24: 95%
8	▲	**LIFE AND DEATH**	Mindscape	£25.53	*STF* 26: 72%
9	▲	**KICK OFF – WINNING TACTICS**	Anco	£12.99	*STF* : 78%
10	NE	**MANCHESTER UNITED EUROPE**	Krisalis	£25.99	*STF* 27
11	▼	**F19 STEALTH FIGHTER**	Microprose	£29.99	*STF* 12: 96%
12	▼	**MONKEY ISLAND**	US Gold	£29.99	*STF* 23: 94%
13	▼	**KICK OFF 2**	Anco	£24.99	*STF* 14: 92%
14	▼	**SPEEDBALL 2**	Mirrorsoft	£24.99	*STF* 18: 88%
15	▼	**POWERMONGER**	Electronic Arts	£29.99	*STF* 19: 93%
16	▼	**CHUCK ROCK**	Core Design	£25.54	*STF* 23: 82%
17	▼	**FINAL WHISTLE**	Anco	£29.99	*STF* 23: 70%
18	▲	**SIM CITY/POPULOUS**	Infogrames	£29.99	*STF* : 94%
19	▼	**SUPERCARS 2**	Gremlin Graphics	£19.99	*STF* 18: 82%
20	NE	**FLAMES OF FREEDOM**	Microprose/Rainbird	£29.99	*STF* 26: 92%
21	NE	**Power Up** Ocean			
22	▼	**Killing Cloud** Mirrorsoft			
23	▼	**Toki** Ocean			
24	▲	**Fists of Fury 2** Virgin			
25	NE	**Shadow Dancer** US Gold			
26	RE	**Atomic Robokid** Activision			
27	RE	**Xenon 2** Mirrorsoft			
28	▼	**Big Box** Beau Jolly			
29	▼	**Viz** Virgin			
30	NE	**Oil Imperium** Rainbow Arts			
31	▼	**Mega Traveller** Empire			
32	RE	**Continental Circus** Mastertronic			
33	▼	**Teenage Mutant Hero Turtles** Mirrorsoft			
34	▼	**Super Monaco Grand Prix** US Gold			
35	RE	**SWIV** Storm			
36	▼	**Flood** Electronic Arts			
37	RE	**Ghostbusters 2** Activision			
38	NE	**Sega Master Mix** US Gold			
39	RE	**Powerdrift** Activision			
40	▼	**Tournament Golf** Elite			

"The English think incompetence is the same thing as sincerity" – Quentin Crisp

ST CHART CHAT

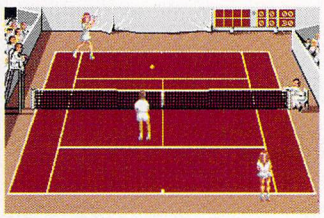
Fantasy games are still proving to be among the hottest selling games during the lazy summer months as *Hero Quest* zooms into the top-spot. However, those zany little furrballs the *Lemmings* are holding their number two spot despite intense competition from *Pro Tennis 2*.



■ ***Hero Quest*, at number one, seems to have found the key to success**

Top selling game overall for the month is *Lombard RAC Rally*, enjoying its second wind nearly two years after it was first released.

Surprise chart appearance of the month must go to *Xenon 2*. People are still buying it at £25, when they could be paying just £10 for the same thing!



■ **An arena of a different kind: *Pro Tennis Tour 2*, ranked number three**

CHARTBUSTERS

Spin cycle me wingnuts, we have a winner, but only just. **David Murphy** of **Cray's Pond** (so that's where all those awful big computers end up) near Reading got closest. If you think you can predict next month's top three, send a card to: Chartbusters, *ST FORMAT*, 29 Monmouth Street, Bath, BA1 2DL. Write your predictions, name and address and the game from the top 20 you'd like to win. In case of a tie, also add your favourite quote from the *Blues Brothers* film. This month's pointers: *Cruise for a Corpse* and *Mega Lo Mania*. The closest to the top three wins; employees of Future Publishing cannot enter; and multiple entries will be ceremonially burnt.

ST BUDGET TOP TEN

1.	▲	**Lombard RAC Rally**	Hit Squad
2.	▲	**Xenon 2**	Mirror Image
3.	▲	**Ninja Rabbits**	Micro Value
4.	▲	**North and South**	Digital Integration
5.	RE	**Fantasy World Dizzy**	Codemasters
6.	▲	**3D Pool**	Mirror Image
7.	▼	**Little Puff**	Codemasters
8.	▼	**Word Class Leaderboard**	Kixx
9.	▼	**California Games**	Kixx
10.	NE	**Run the Gauntlet**	Hit Squad

CHART KEY

RE	Re-Entry
NE	New Entry
◆◆	Non Mover
▲	Up
▼	Down

■ Main Charts: *STF* refers to issue and score of review in *ST FORMAT*. These full price and budget ST charts are compiled and supplied by Gallup. © 1991 European Leisure Software Publishers Association Ltd

TOP TEN
THIS TIME LAST YEAR

1	<>	**F19 Stealth Fighter**	Microprose	£29.99
2	▲	**Shadow Warriors**	Ocean	£24.99
3	▼	**Kick Off 2**	Anco	£24.99
4	▲	**Battle of Britain**	US Gold	£29.99
5	NE	**Operation Stealth**	US Gold	£24.99
6	NE	**Battle Master**	PSS	£24.99
7	NE	**Back to Future 2**	Mirrorsoft	£24.99
8	NE	**BSS Jane Seymour**	Gremlin	£24.99
9	NE	**Oriental Games**	Microprose	£24.99
10	NE	**Shadow of Beast**	Psygnosis	£34.95



Side1

MAGIC POCKETS
ULTIMATE VIRUS KILLER
SNOWFLAKE FRACTAL GENERATOR

Side 2

XCONTROL
CALSHOW
ATARI TOS 1.4 FIXES
ASSEMBLY GUIDE FILES

Cover Disk 26

MAGIC POCKETS

BY: RENEGADE
SIDE: 1
MACHINE: ALL COLOUR STs
RESOLUTION: LOW (but starts in MED too)
FOLDER: POCKETS
FILE: POCKETS.TOS

Stand by for a tale of terrific trousers, superb shorts and pandimensional pants! *Magic Pockets* is the story of a small boy, the Bitmap Kid, who owns a pair of strides with huge, bottomless pockets!

He keeps all his toys inside them and no-one knows they're there. But disaster has struck! He's lost his favourite ones somewhere in the pockets' dark depths. How can he find them? Simple! He pulls out a black hole and drops it on the floor. Voila! A doorway to Pocket Land!

He dives in and appears inside his own trousers. But instead of washing labels and bits of half-chewn gum, he finds a dangerous world populated by monsters. How can he get past them to find his all-important toys?

This Cover Disk demo version of *Magic Pockets* centres on the first level of the Bitmap Brothers' complete game. You'll find the Bitmap Kid with nothing to protect himself except for the magic he can pull from his pockets. His main weapon is a wacky whirlwind which he can send flying towards his foes at several different strengths. If he can manage to defeat the nasties, he might just be able to retrieve his lost push-bike.

HOW TO LOAD IT UP

To load *Magic Pockets*, pop the Cover Disk (or better, a backup – see page 28) into your ST's drive and switch on. When the Desktop appears, double-click on the folder POCKETS. Inside you find the program, POCKETS.TOS. Double-click on this to load and run the demo.

THE SCREEN DISPLAY

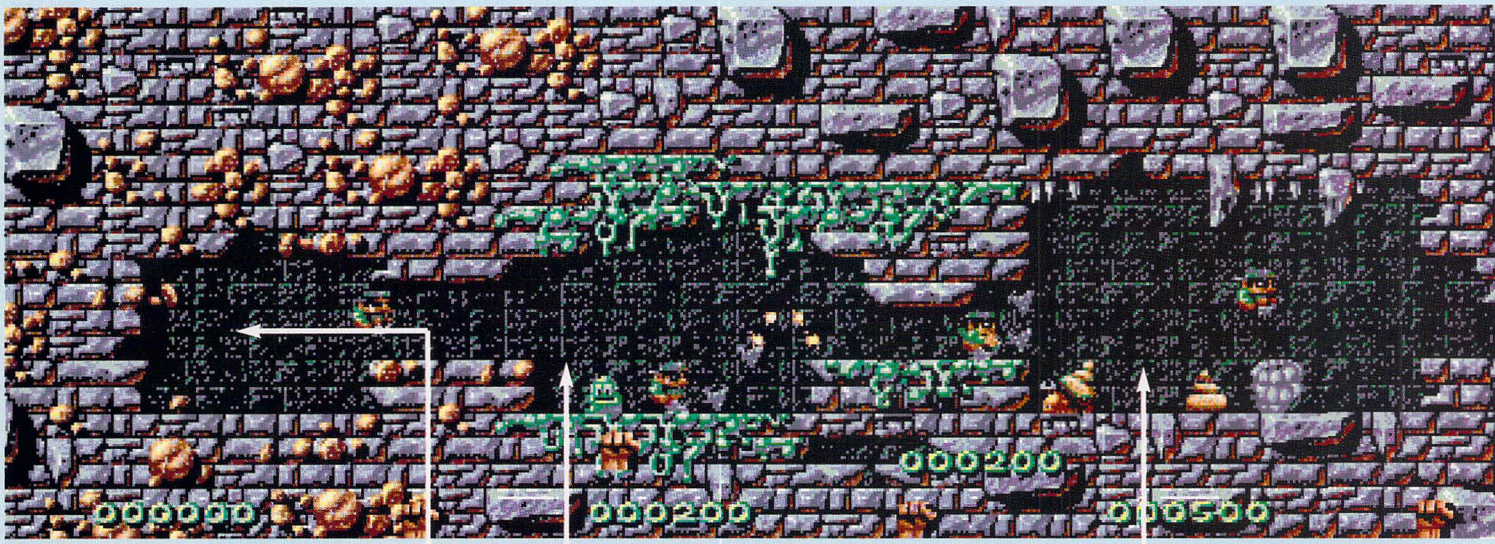
Magic arrow
This appears every few shots and indicates the general direction of the Bitmap Kid's bike. It's relative, so it doesn't always point in the direction you need to move in immediately. As you get closer to the bike, more and more arrows appear, just so you know!



Lives left
Each finger represents one of the four available lives. As each life is lost, a finger disappears

Power level
When you press the Fire button, the power level disappears and then gradually reappears until it's fully redrawn. When it's complete, the shot fired is at maximum power. Anywhere in between creates a smaller whirlwind

Score
Every monster is worth points and your running total is displayed here



A PEEK IN YOUR POCKETS

This is where you start the demo

Blobs live here. They can't jump (yet!), so stand on the ledge and shoot down at the little greenies

Here be snails! Use the same method as you used for the blobs. If they hide in their shells, just hang around and wait

PLAY THE GAME

Use the first location to practise throwing whirlwinds. To fire a small one, just tap the Fire button and push the joystick in the direction you want it to go. To throw a biggie, hold the Fire button down until the hand icon re-appears on the right of the screen. You can also tell the strength of the whirlwind by looking at the bulge in the Kid's pocket (!).

Small whirlwinds are useful for killing or injuring monsters, but the high-powered winds have additional effects. If a massive tornado hits a monster, he gets wrapped up inside it and cannot escape. Jump on top of the trapped monster to score bonus points.

The harder you hit the whirling monster, the more bonus points you get. So don't just walk into the winds – find a ledge and leap onto them. Objects fly out of the crushed creature in all directions and you can then cash them in. Don't let other monsters touch the objects because they may disappear.

The whirlwinds have an even more useful function. Hit the Fire button to power up, and then release a full-blown wind by pulling down on the joystick. The whirlwind should stop by the side of you. Now move into the cloud and pull the joystick down. The Bitmap Kid hurtles around the screen, rolled up into a ball! While he's in this state, he's invincible and can kill monsters with a single touch. You can guide him using the joystick, but watch out! When the magic wears off, he's vulnerable again.

MONSTER MAYHEM

Now that you're armed with pocket-power, you can safely take the rest of the monsters on. Don't rush into them – there's no time limit so you can afford to be careful. Beware of bats which swoop down from the ceiling and often travel in groups. Goblins, on the other hand, are semi-intelligent. Don't let them see you if you intend to run away – they'll chase you and throw rocks at your head! Snails tend to be more evasive, ducking under their shells.

Remember to maximise the scoring potential of all your victims. Don't just shoot at them, trap them and leap on them! Occasionally you get silver and gold stars which make the next bonus item into a special power-up. These power-ups include the laser helmet, the smart bomb among others. You can activate them by standing behind the object and pulling the joystick down.

WHAT TO DO AT THE END

When you make it to the top, do the same thing with the bike and pedal your way to victory by pushing in the appropriate direction. You're invincible at this point because the bike takes all the damage for you. If you get really stuck, leave the game alone until the demo mode appears. This shows the entire level and offers useful tips and strategies.

OBJECTS TO PICK UP


gold ball
100


candy stick
200


milk
bottle
900

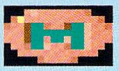

ice lolly
300


sweet
400


mug
faster fire


polo mint
100


choc
bar
500


coin
1,000


cup of tea
semi-fast
fire


cocktail
fire bonus
sweets


baby's bottle
extra life

MONSTERS


snail
100


bat
500


goblin
500

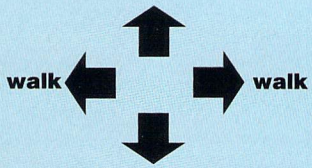

blob
600


frog
900

THE CONTROLS

The joystick controls are straightforward, but be careful – pushing forward doesn't make you advance, as in many other games

jump, throw or fire



pick up, drop or use



Beware the bats! They swoop down on you from above. Step to the edge to attract them and duck into the tunnel for safety

Bonus milk bottle to collect

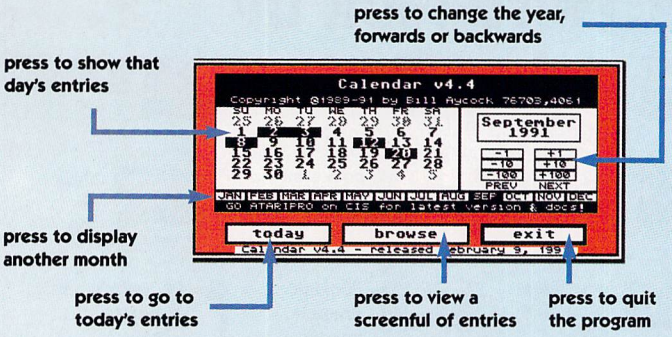
More blobs, but a bit tougher than the last lot

Fire at the frogs from the ledges below to avoid getting killed

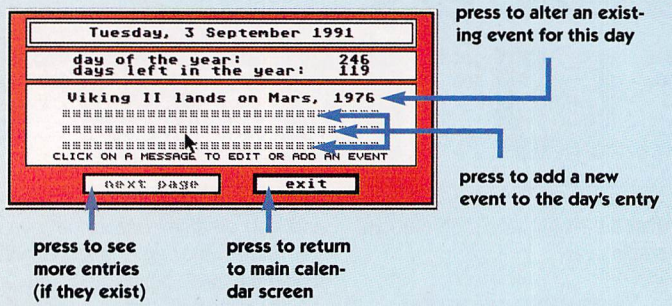
To get extra sweets, power up and fire when you collect this

That's it! You're on your own from here...

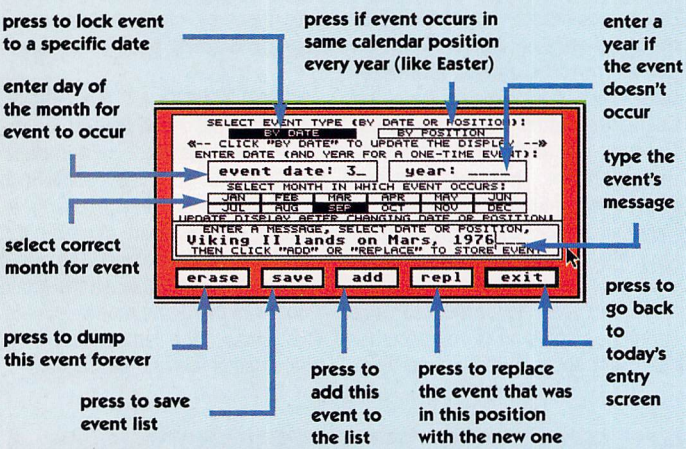
■ **The Calendar's main screen shows the days of the current month**



■ **You can extend or change each day's entry list on this screen**



■ **If you choose to alter or add an event, you're taken to this screen**



CALSHOW

BY: BILL AVCOCK
SENSIBLE SOFTWARE
SIDE: 2
MACHINE: ALL STs
RESOLUTION: LOW, MED or HIGH
FOLDER: CALSHOW
FILE: CAL44.ACC, CAL44.DOC, CALSHO42.PRG, CALSHOW.DOC, CALSHOW.PTX

CalShow is not only an excellent calendar program, it's an American history lesson too. It's in two parts: an Accessory, which handles a list of events that you can enter, and an AUTO program, which displays one screen's worth of events when you boot up. There's already a huge list of weird American stuff in there.

First, prepare a blank disk to create your own events list on. Format a disk in the normal way, then create a new folder called AUTO. Copy CALSHO42.PRG into this folder, then copy CAL44.ACC (it's the calendar and events editor) and CALSHOW.PTX (the program to display the events list) to the main directory.

CalShow uses CALSHOW.PTX to tell it where to find CAL.44.ACC. If you move CAL44.ACC out of the main directory, you must modify CALSHOW.PTX. The programmer explains this, and some other tricks, in the file CALSHOW.DOC, so check it out if you want to customize *CalShow*.

When you've set everything up correctly on your new disk, just reset your ST with the disk in the drive. You should now see a screenful of events and then the Desktop. To activate the calendar, move the mouse up to the Desk menu and select Calendar from the list which appears. Check out the panels to see what all the buttons do.

LOUD FORMATTER

BY: G.HUNGERFORD
SIDE: 2
MACHINE: ALL STs
RESOLUTION: LOW, MED or HIGH
FOLDER: LOUDFORM
FILE: LOUDFMT1.PRG, LOUDFORM.DOC, SPEECH.TOS

Formatting disks is a boring process at the best of times, so why not liven it up by using the *Loud Formatter*. Just double-click on LOUDFMT1.PRG to start the program and you'll see a large dialogue box appear on-screen. To change the formatting characteristics just click on the appropriate boxes and the Formatter's voice tells you what the new set-up is.

A short file called LOUDFORM-.DOC tells you a few important things to remember when moving *Loud Formatter* around. Read it if you have any trouble.

As an added bonus, you can double-click on SPEECH.TOS to activate the talking part of *Loud Formatter* separately. Type in some text and then press <Return> to make your ST speak. To make the voice sound a bit more human, use question and exclamation marks to raise and lower the pitch of each sentence. One word of warning though: SPEECH.TOS doesn't like very long lines of text and crashes if it's overloaded.

ATARI TOS 1.4 FIXERS

BY: KEN BADERTSCHER/ATARI
SIDE: 2
MACHINE: ALL STs WITH TOS 1.4
RESOLUTION: LOW, MED or HIGH
FOLDER: ATARI1.4_FIX
FILE: CACHE.TTP, CACHREAD.ME, POOLFIX3.DOC, POOLFIX3.PRG, TOS14FIX.PRG, TOS1.4FIX.TXT

This is a special package of rare programs – the ones Atari forgot to put in TOS 1.4. Useful only to owners of TOS 1.4 machines (STFMs with the rainbow-coloured Atari symbol in the top left corner of the Desktop). There are two patch programs (POOLFIX3.PRG and TOS14-FIX.PRG) for fixing two rare bugs in the Operating System, plus a disk-caching program (CACHE.TTP) to speed up disk accessing. Full documentation is supplied by Ken Badertscher, the original Atari programmer of TOS 1.4. All you need is in the files CACHREAD.ME, POOLFIX3.DOC, and TOS1.4FIX.TXT. Double-click on them and select Show to read the files on-screen.

LOOK AT THE SIZE OF IT!

Every month, *FORMAT's* Technical Ed sets to work on the world-famous *ST FORMAT* Cover Disk. Requiring more coffee and fags than any other magazine's disk to put together, this is, as they say in technical circles, big. This month there are eight bulging folders packed with goodies for you, leaving only *mmmph* KBytes free. (Number removed because of this month's quiz on page 136.)

OLD-FASHIONED SINGLES CLUB?

Things went a bit awry with the first STs Atari ever made. The drives they fitted could read only one side of a disk. Yes, it is a bit daft, but it gets worse. The old-fashioned "singlies" couldn't even begin to read a double-sided disk. Not even the first few bytes. At least, not until *ST FORMAT* put its best brains on the problem...

ANYONE CAN USE IT

Rob Northen was an unknown genius living in Surrey, until he created the first *ST FORMAT* Cover Disk. Now he's a world-famous unknown genius living in Surrey, and his legacy is an amazing disk formatter that enables everyone to read at least the first side of the Cover Disk. No-one need be left out. We guarantee that this disk can be read by all STs, no matter how old or new.

DOUBLE THE FUN

If your ST is younger than three years old you should be able to read everything. To get access to the second side of the Cover Disk just double-click on the folder named SIDE_2, just as you would on any other folder. It should open up a normal window, listing all the files contained on Side 2.

IT WON'T OPEN?

If you have a single-sided drive and you try opening the SIDE_2 folder, then you see an alert message. You're told that the data on the disk may be damaged, but this is just the ST's way of telling you it can't read Side 2. Don't fret, just click on CANCEL and you'll be okay.

TROUBLE-FREE DISK DRIVING

Whatever your ST setup, you can't afford to take risks. *FORMAT's* Cover Disk is guaranteed virus-free – our duplication master disks are tested personally by the Tech Ed himself. But this doesn't make it fireproof. If the write-protect tab on the disk is left enabled (closed), then viruses can gain access to the disk. Protect your Cover Disk as soon as you buy it, by opening the tab and backing it up. It's the only way to be absolutely sure you're safe!

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ULTIMATE VIRUS KILLER

BY: RICHARD KARSMAKERS
DOUGLAS COMMUNICATIONS
SIDE: 1
MACHINE: ALL STs
RESOLUTION: MED or HIGH
FOLDER: UVK_DEMO
FILE: UVK_5_OD.PRG, READ_ME.TXT

Inside the folder UVK_DEMO there's a virtually complete version of the *Ultimate Virus Killer*, published by Douglas Communications and written by Richard Karsmakers. Run the program by double-clicking on UVK_5_0D.PRG file. It's a cut-down v5.1 package except for a couple of differences:-

1) You can only kill ONE virus during a session with this demo version. If you want to kill more than one, you must start the program



■ **Stand by to repel boarders! The pirates' plague has now reached epidemic proportions and virtually everyone is at risk from viruses. With *Ultimate Virus Killer* and our in-depth feature, you've no need to worry**

twice. In the real version you can kill as many as you want.

2) You can have a look through the list of harmless bootsectors that can be repaired, but you can't write them to your disks in this demo.

3) You cannot update this demo version, nor can you have unrecognised bootsectors analysed by the author. You can update the full version virtually at cost price, and any unrecognised bootsectors can be sent in for analysis.

4) You can only kill the most popular viruses!

For more information on viruses, their syptoms and effects and how to safely disinfect your ST, turn to the Virus feature on page 30.

NEW KILLER COMING

New versions of the *Ultimate Virus Killer* are released at regular intervals, generally three or four times a year. If you check under the "Info about V5.0D" button in the main menu, you can find the statistics of this *ST FORMAT* version. The full version's are higher. Some of the main features of the full *Ultimate Virus Killer* are:

- Extensive recognition of viruses and resident programs in memory.
- Support of (MEGA) STE, TT, Metados, Gemini, NeoDesk, KAOS-TOS/Desk.
- Automatic recognition of any drives/partitions attached.
- Automatic checking of any whole drive/partition for link viruses.
- Context-sensitive on-line help mode.
- Works on colour as well as monochrome systems, regardless of the amount of memory found.
- Documentation includes a full list of known viruses with precise description of symptoms.

The fully up-to-date version is available at £9.99 from Douglas Communications, PO Box 119, Stockport, Cheshire, SK2 6HW, United Kingdom ☎ 061 456 9587.

FAULTY DISK?

In any disk duplication as large as *ST FORMAT's*, it's possible that a tiny proportion of disks might be faulty. If you're unlucky, sorry. For a free replacement send your disk, with an SAE, to: *ST FORMAT* September disk returns, Discopy Labs plc, Unit A, West March, London Road, Daventry NN4 4SA

XCONTROL

BY: ATARI
SIDE: 2
MACHINE: ALL STs
RESOLUTION: LOW, MED or HIGH
FOLDER: CONTROL
FILE: XCONTROL.ACC, XCONTROL.TXT, COLOR.CPX, CONFIG.CPX, GENERAL.CPX, MACCEL.CPX, MODEM.CPX, PRINTER.CPX, SOUND.CPX, WCOLORS.CPX

XControl is the newest version of the Atari Control Panel Accessory which is designed to take advantage of features available in the latest (above v2.0) versions of TOS. All STs can use *XControl*, but if you don't have a Mega STE, TT030, or later machine, you *must* use the shutdown feature of *XControl* whenever changing resolutions. (See note under Shutdown.)

The *XControl* Panel coordinates many smaller programs called Control Panel extensions (CPXs). The initial Control Panel screen displays the names of all currently loaded CPXs. You can open a CPX by positioning the pointer over the desired CPX and double-clicking on it.

The Control Panel also contains a pull-down Options menu. When no CPX is highlighted, the Options menu displays two or three menu choices depending on the TOS version you have: About, Setup and Shutdown. Two additional Options menu choices are displayed when a CPX name in the main Control Panel window is highlighted. The three additional options are: Open CPX, CPX Info, and Unload CPX.

To select an option, position the pointer over the Options menu and click on the mouse button. The Options menu appears. Move the pointer until you highlight the desired option and click the mouse button to select it. To begin with, you need to select Setup so you can tell XControl where you've stored all the CPXs.

SETUP

You can use the Setup dialog box to change a CPX's status (active/inactive), reload CPXs without restarting your ST, set the amount of memory reserved for basic CPX information, and designate a CPX directory path. You can also use the calendar and clock to set the time and date.

CPX DIRECTORY PATH

The CPX Directory Path tells the Control Panel where to look for CPX files. You can store all of your CPX files in one folder, and set the directory path to that folder. To change the CPX Directory Path, follow these steps:

1. Open the Control Panel. Select Setup from the Options menu.
2. Click anywhere on the CPX Directory Path box.
3. The File Selector appears. Use it to select a new path. When you open a directory, the directory name is added to the File Selector's directory line. When the desired directory path is displayed, select OK. The new path appears in the CPX Directory Path box.

SHUTDOWN

Whenever you change resolutions, you must shut down the Control Panel. If you don't perform the shutdown, unexpected results may occur during other applications. This option only appears if your version of TOS does not support the proper shutdown procedures.



■ **Use the options Setup menu to take you to this screen. Click on the directory name to tell *XControl* where the CPXs are**

OPEN CPXS

To open a CPX, first highlight the CPX on the Control Panel main window, then select Open CPXs from the Control Panel Options menu. You can also open a CPX by double-clicking on its box in the Control Panel main window. Here is a brief list of the CPXs included:

Color Setup
Alter your ST's palette colours
Configure CPXs
Changes the names, text, icon colors and the RAM resident status of CPXs.
General Setup
Sets up the keyclicks, repeats, alarm bells and so on.
Modem Setup
Configures baud rate for your modem
Printer Setup
Alters the baud rate and print quality for your printer
Sound Setup
Enables you to re-balance and tune stereo sound (STEs only)
Accelerator Speeds up the mouse
Window Colours
Changes the window, icon and border colours (TTs only).

More detailed info about using and setting up XControl in the file XCONTROL.TXT. Double-click on this (it's best in medium or high res) and select Show to read it on-screen.

ATARI ST - ULTIMATE VIRUS KILLER REGISTRATION

Name _____
Address _____
Street _____
Town _____
City _____
County _____ **Postcode** _____

Equipment Used _____

Please complete and post to:
Douglas Communications, PO Box 119, Stockport SK2 5HW

WHERE'S THE MAC?

PageStream 2

The Desktop Publisher for the Rest of Us.

PostScript Font Friendly

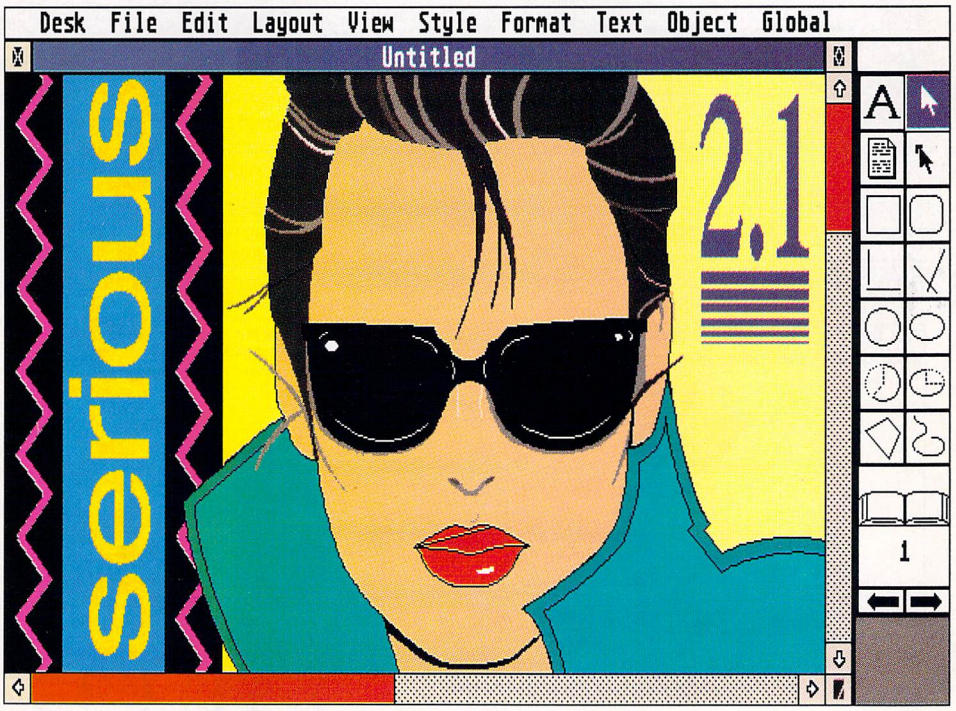
- Use PC PostScript fonts!
- Even with dot matrix printers!
- And no jaggies on-screen!

And Compugraphic Fonts

- Use Compugraphic Intellifonts!
- 10 are included!

We Know our Graphics

- IMG, TIFF, GIF, GEM, MacPaint, EPS, Degas, NEO, TNY, IFF . . .



Actual PageStream 2.1 screen shot. PageStream is ST/STE/TT compatible.

Have you ever been envious of all the neat DTP programs for the Mac? They have all those great PostScript fonts, multitudes of clip art and with Adobe Type Manager they don't have screen-jaggies. "Sure, we didn't have to mortgage the house to buy a computer, but it would be nice to have all those fonts."

SAY NO TO MAC ENVY

At Soft-Logik, we have a cure for Mac envy. We call it PageStream 2.1. Do you want PostScript fonts? PageStream lets you use any PC format PostScript font. Plus, PageStream can print PostScript fonts on your dot matrix, inkjet, HP or Atari laser printer!

SAY YES TO HINTED COMPUGRAPHIC FONTS

There are now two types of Compugraphic fonts for the Atari: unhinted, non-standard format fonts and hinted PC standard Intellifonts. Guess which we chose? PageStream 2 has the latest Compugraphic Intellifont Bullet technology. These typefaces are hinted so that they look great on all printers, even at small sizes. Of course we give you ten fonts from the Times, Triumvirate and Garamond families to get you started..

LOOK MA, NO ATM!

Because Adobe Type Manager is not likely to be released for the Atari any time soon, we've built font scaling technology into PageStream 2.1. When you select Palatino Italic 72, that's what you will see on the screen, even if you rotate it or bleed it off the page. PageStream scales all Compugraphic, PostScript and Soft-Logik outline fonts.

HOW MANY GRAPHIC FORMATS DO YOU KNOW?

Take thirty seconds to list all the graphic formats you know. Chances are that PageStream will know even more! Whether you need PostScript illustrations with bitmap previews, 16 million color pictures or scanned grayscales, PageStream will handle them.

WHY DID WE GO TO ALL THIS TROUBLE?

Soft-Logik exists because of Atari users like yourself. We grew up with the Atari ST and we think Atari users deserve the best. We believe PageStream 2.1 is the best. So the next time you feel Mac envy, take a dose of PageStream 2.1. You won't be left wondering "where's the Mac?"

Soft-Logik Publishing Limited *We give you the tools to dream.*

PageStream is a registered trademark and "We give you the tools to dream" is a trademark of Soft-Logik Publishing Corporation. Adobe Type Manager is a trademark of Adobe Systems Inc. PostScript is a trademark of Adobe Systems. Bullet and Intellifont are trademarks of AGFA Compugraphic. Atari is a trademark of Atari Corporation. Mac is a type of fruit consumed by people in gardens.

SNOWFLAKE FRACTAL GENERATOR

BY: JASON DOBBS

SIDE: 1

MACHINE: ALL STs

RESOLUTION: LOW, MED or HIGH

FOLDER: SNOW

FILE: SNOW.PRG, SNOW.RSC, SNOW.TXT, SNOW.LZH, CROSS.FRA, HUH.FRA, KOCH, FRA, SQUARE.FRA, THORN.FRA, TRI.FRA

This program generates fractal curves based on the Von Koch snowflake principle. Double-click on SNOW.PRG to get it running. The program is GEM-based and works in all resolutions, but is a bit "truncated" in low resolution.

The initial data in the program is for a Von Koch snowflake, and you can see this by pressing Generate fractal. It works by manipulating two sets of data – the initial curve data and the departure line data. If you set the number of iterations to one, and then select Generate fractal, you can compare the original departure line to the finished pattern and see how it works. Check out the panels for a detailed look at what's happening.

There are several preset fractal curves which you can load. Use the Load fractal data menu, set the iterations as desired and then hit Generate fractal. When you've seen them all, design your own – alter the initial curve and line data by dragging them with the mouse.

ASSEMBLY GUIDE

BY: GLEN CORPES/BULLFROG

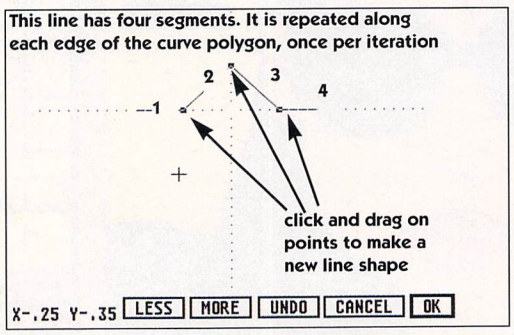
SIDE: 2 **MACHINE:** ALL COLOUR STs

RESOLUTION: LOW or MED

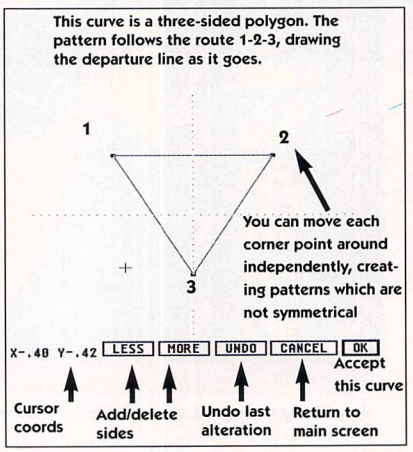
FOLDER: BULLFROG

FILES: FONT.DAT, SPRITE 16.DAT, SPRITE32.DAT, SPRITES.S

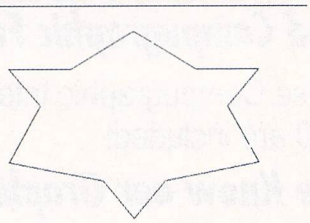
Here are all the files you need to build your own game, courtesy of the Bullfrog team. See page 113 for a walk-through. Make sure you back up these files onto a blank disk – you're bound to alter them and you wouldn't want to lose them completely. To assemble the data together, you also need *Devpac 1* (which was free on Cover Disk 22 – see page 110 if you missed it).



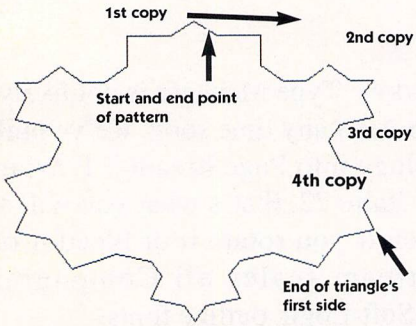
■ 1. The departure line data screen is where you set the complexity of the lines which make up the edges of the pattern



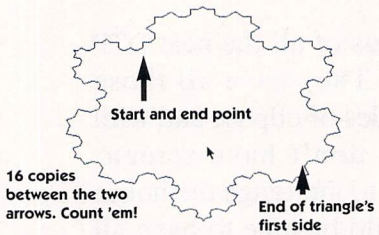
■ 2. The Curve data screen is where you set the overall shape of the pattern



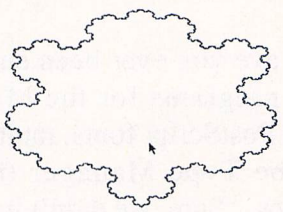
■ 3. Using the departure line and curve data above, *Snowflake* creates this pattern when set to one iteration. Each of its three sides is made from a single, distorted copy of the departure line.



■ 4. This pattern is created by using the same line and curve, but setting up for two iterations. Each edge of the original triangle is traced as before, but now there are four copies of the departure line, end-to-end, on each side



■ 5. After three iterations, the snowflake is more impressive. It takes longer to draw because the departure line is repeated 16 times along each side of the original triangle



■ 6. This pattern uses the same line data, but the curve is a square. This drawing is set for seven iterations, making a far more complex image. It takes about five minutes to finish

WHAT'S UP, DOC?

Included in some of the folders on the Cover Disk are documentation files containing notes from the programmer, an upgrade/contributions address, or operational hints and tips. These are always worth reading or printing out because *FORMAT's* Cover Disk pages often skimp on the highly detailed aspects of a complex program, especially if there are DOCs present on the Disk.

Documentation files are usually named something like README.DOC or PROGNAME-.TXT. To read them just double-click on the file icon and a dialogue window appears. This says something like "You can only show or print this document." Click on SHOW and your ST displays the file on-screen. (This is usually more readable in medium or high res, even if the program runs in another resolution.)

Click on PRINT and your ST sends the file to a printer – if you have one connected and set up correctly. Be careful that you don't click on this if you don't have a printer – you may cause your ST to "hang up."

Covered in disinfectant? Trousers burst? You need...

COVER DISK HOTLINE 0225 442244

WEDNESDAYS (2pm to 6pm)

Having trouble with your Cover Disk? You need someone to turn to. The Cover Disk Hotline provides you with a link to the *ST FORMAT* offices, where you may find the answer.

Before you ring, please make sure you have thoroughly read *all* the relevant parts of these Cover Disk pages and all doc files. If that doesn't solve your problem, try consulting your Atari ST Owner's Manual, which may help you find what you're doing wrong. If all else fails, ring during the hours specified and we'll do our best to help.

However, we don't write the Cover Disk programs ourselves, so we may not know *everything* the programmers do. Have the ST nearby (up and running), and let us know which model ST you have, plus the issue number of the Cover Disk concerned. Do this before you call, and it might save you a large phone bill.

BACK UP YOUR DISK!

Because the *ST FORMAT* Cover Disk is non-standard, the backup procedure is not simple. Follow these steps, though, and you won't encounter any problems. Do it any other way and you could mangle your Cover Disk. And then where would you be?

1. Format a couple of blank disks (you may not get all the data onto one) – single-sided if you've got a single-sided drive, double-sided if you have a double-sided drive.
2. Write-protect (notch open) the original Cover Disk and insert it into the drive (if you have two drives, you lucky devil, insert the Cover Disk into drive B). Double-click on the drive B icon to open a window showing the Cover Disk contents. If you haven't got a second drive, a message appears requesting you to put disk B in drive A. Simply click on OK.
3. Insert one of the blank formatted disks into drive A (removing the Cover Disk if you have only one drive). Double-click on the drive A icon and open up another window. You may be asked to insert disk A in drive A – you already have, so do nothing and just click on OK again.
4. Highlight each folder in the drive B Cover Disk window and drag them into the drive A window, one at a time.
5. If you have only one drive, you're asked to insert disk A and disk B at regular intervals. Don't mix the two up! Disk B is the original Cover Disk and disk A is the freshly formatted disk.
6. When you get a "disk full" error message, recopy the incomplete folder (the last one you were copying) and any subsequent folders onto the second freshly formatted disk, using steps 3 and 4 above.
7. Double-sided owners, double-click on SIDE_2 once you've finished copying all the folders from side 1 of the Cover Disk. Copy the folders inside as you did in step 3. When it's finished, use only the backup. Put your Cover Disk away safely.
8. Don't forget, you must not try to use the standard Atari disk copy (dragging floppy A onto Floppy B) function – it won't work.

Specifications are subject to change without notice

POWER COMPUTING

NEW LOW PRICES

New Series 900 Hard Disk

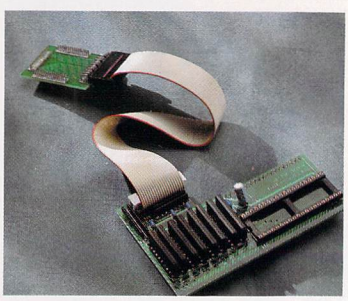


- Super-slim metal case
- Low profile mechanism, no need for a cooling fan
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- Optional battery backed up clock
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- Write protect switch, protect your valuable data
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40MB	£329	100MB	£479
40MB with clock	£339	100MB with clock	£489

With any Power hard disk: Lattice C Version 5, £55 (normally £89)

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NEW! 512K RAM Expansion
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- Back up your disks at lightning speed
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- Cleverly by-passes your ST's disk controller chip
- Back-up an ST disk in around 40 seconds

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Built in power supply	£55
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Powered through the joystick	£45
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Including PSU	£50
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(no case cutting, but must be small button)	

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- Combined 3·5" & 5·25" units
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All prices include VAT and are subject to change

Protect, detect & survive

Until there's legislation against viruses, it's up to you to protect yourself from infection. Don't die of ignorance! Neil Jackson shatters the myths and shows you how it really is

Viruses are to computers what rust is to cars. They strike without warning, and often by the time you notice there's something wrong it's too late to do anything about it. The damage has already been done. All you can do is patch up the bits that the virus has been kind enough to leave only partly damaged.

Despite what the tabloid press has had to say on the subject of viruses, there's no danger of human infection or wholesale computer destruction. The only victim is data. And you, because you're the one who has to repair the damage.

A virus is rather like a small child who's learned how to write a new word. You find that word scrawled over the pages of your favourite book, your driver's licence, your bank statements – whatever the kid gets his hands on. In the same way, a virus indiscriminately puts data where it shouldn't be, or systematically disposes of whole blocks of data at a stroke. Even if all your data is just personal, unimportant stuff, it doesn't take much work to imagine the kind of upset this could cause. And that's why you need to be armed with the facts, the tools and the ability to prevent the damage *before* it happens.



UNDER

There are nearly 100 documented viruses for the ST, and more are being written as you read this. Don't believe us? Then check out this list, which shows just some of the oldest, nastiest or just plain weirdest viruses your ST can catch. Many of them exist in several forms, because the viruses sometimes become corrupted in memory and get saved to disks incorrectly.

BOOTSECTOR VIRUSES

A bootsector virus loads into memory when you boot from an infected disk. (See p 34.)

ACA
Copies itself ten times, then clears track 0 from the current disk in the drive. This entirely removes the file allocation table and BIOS parameter block, making all the data on the disk virtually irretrievable. Allegedly created by the ACA crew (a pirate group) from Sweden.

BATMAN
Copies itself infinitely, but not in the normal fashion. Various operating system functions are intercepted, making it reset-proof. It can destroy directories if they are quite large, because of the way it stores itself on disk. It also turns the mouse pointer into a Batman logo one hour after you're infected. The most dangerous aspect of the BATMAN virus is that (until now) it was considered safe by *all* virus-killers, because the bootsector is non-executable. All viruses require the disk's execute flag to be set, so the ST runs the virus program when it boots the disk. At least that's what was thought! Now this ingenious technique has been discovered, it can be spotted and removed, but it's had plenty of time to reproduce itself!

BAYERISCHE HACKER POST (BHP)
Copies itself but does nothing else. This still messes up your disks though! Named after the user group that created it. They originally claimed in their magazine that it could write to any disk (regardless of the write-protect tab's position) and that it was reset-proof. Luckily it doesn't live up to these claims.

C & T
Copies itself, even to a hard drive because of an undocumented feature of the ST's operating system. It's reset-proof, so it can only be cleared from the ST's memory by turning off the machine. When it activates, it deletes the file allocation tables of both floppy and hard drives, making everything virtually irretrievable. Featured in a German magazine as a type-in listing, complete with information on modifications that could easily be made to it, so it's probably prevalent in Germany, in a variety of guises. At least one version prints

Photo: ZEFA

THE *STF* MICROSCOPE

schlagen" on the screen when it's done its evil business. Translated, this means "Oh dear! Disk virus has struck again," or something similar.

CHOPIN
Copies itself to disks in drive A and attaches itself to the GEMDOS trap vector. After 26 successful copies, it plays Chopin's Death March repeatedly and freezes your ST. It also prints the rude message "F***! YOU'VE GOT A VIRUS!" when the music reaches its end point.

COOKIE MONSTER
Copies itself 30 times and then prints "YOU KNOW WHAT? I WANT A COOKIE!" on-screen. If you type in COOKIE the virus allows you to continue with whatever you were doing before the interruption, but after 20 more successful virus-copies, it does it again. And again. And, er, again!

COUNTER VIRUS
Copies itself to disks in drive A and B, but doesn't do anything else except keep a count of the number of successful copies. Probably someone's experiment in virus-writing that made it onto the streets.

EVIL
Copies itself 100 times, to the current drive, and then inverts all the screen colours. Contains the words "EVIL! – A Gift from Old Nick," which indicates it was probably written in the UK. The virus programmer was obviously aware of the existence of *UVK*, since he modified his virus to look like an ordinary Atari system disk when scanned by *UVK*. Now *UVK* has been modified to check even more data, and EVIL is now detectable.

FAT
Copies itself to non-executable disks, rather like the SCREEN virus (see below). FAT uses time delays and is consequently difficult to detect. When it activates it randomly accesses memory, corrupting data. Often the first visible signs are blots appearing on the ST's display Allegedly only works on TOS 1.0. FAT is so-called because it is larger than most bootsector viruses and stores itself on disk in the last part of the ST's file allocation table (FAT) as well as the bootsector.
Also known as the SWISS or BLOT virus

5TH GENERATION
Copies itself whenever the BIOS RWABS function is called by the ST's operating sysem. This affects all floppy reads and writes. The virus can only attack disks in drive A, and even then only disks which are non-executable (like SCREEN and FAT virus). After five successful copies, it writes garbage in the first 34 sectors of the disk in the drive. This ruins all directory entries, file allocation tables and the BIOS parameter block, resulting in an irretrievable disk.

FREEZE
Copies itself to subsequent disks, every time the directory information (stored on sector 11 of ST disks) is accessed. The virus also gradually slows down the ST's operating system, until eventually everything freezes up.

GAUWEILER
Copies itself an infinite number of times. It's reset-proof, and a reset actually activates the main attack. The message "AIDS – Gauweilers Rache" is printed on-screen before your ST freezes.

GHOST
Copies itself ten times and then flips the mouse Y-axis, causing your mouse to move up when pushed down and vice versa. This virus is the most common on the ST and has been positively identified in Britain, Sweden, Holland and Germany.
Also known as the MOUSE virus.

GREEN GOBLIN
Copies itself to other disks an infinite number of times. It messes around with the disk buffer and the screen before printing "The Green Goblins Strike Again." Sadly, this virus made its way onto *ST User* Disk #58 and is now widespread in the UK.

KOBOLD 2
Copies itself to other disks in drive A infinitely. The virus program is incredibly well encyphered and nobody knows for sure what it does. It activates after a reset and displays the message "Kobold #2 Aktiv" (which leads us to believe it's of German origin).

LAB
Copies itself ten times before blacking out the screen. Everything else carries on as normal – you just can't see it! It's a modified version of the BHP virus (see above).

MAD
Copies itself five times, then messes up the screen or makes beeping noises on the ST's sound chip.
Also known as the FUN virus.

MAULWURF 1
Copies itself to subsequent disks and checks to see if certain system variables have been altered in the ST's memory. If they have, then it prints "Maulwurf 1 – SSG" (Subversive Software Group, the virus's creators) on-screen and then freezes the ST's system. Maulwurf is reset-proof and can only be removed from memory by switching off.

MEGA C***
Copies itself 20 times before flashing the background screen colours. This virus is particularly nasty because it looks specifically for a certain type of floppy disk – Immunised ones! Many killers offer an immunisation option which can prevent some viruses infecting the disks in the first place. MEGA C*** can recognise these and targets them for infection! And of course, because they've been immunised, they're usually write-enabled, thus giving easy access to the virus. Sadistic, or what?

MONITOR
Copies itself infinitely and displays random lines on the monitor screen. It's reset-proof, but can only copy to drives A and B.

OLI
Copies itself (even to hard disk) 20 times before doing something. What this is, nobody's sure about! It's reset-proof, but thankfully not widespread.

PMS
Copies itself 50 times before printing "*** The Pirate Trap ***, * You're being watched *, *** (C) P.M.S. 1987 ***". This is a very old virus which has only recently been discovered. This may be because of its tricky method of hiding or the fact that it hasn't spread widely until recently.
Also known as PIRATE TRAP

PUKE
Copies itself five times and then deletes the first file it finds in the directory of the disk in drive A or B. A more destructive breed of virus, but thankfully not reset-proof.

SCREEN
Copies itself to subsequent disks, but only those which have non-executable bootsectors. This means it infects everything you personally formatted, plus any game disks which run from Desktop or an AUTO folder. After a preset time it blacks out the screen. Only works on the very early TOS 1.0.

SIGNUM/BPL
Checks subsequent disks for a specific code, hidden in another virus. If it's found, the SIGNUM/BPL virus executes the hidden bootcode on the new disk. What this does, few people know – no-one has yet found a disk with the correct code virus on! If the code isn't found it simply copies itself to the new disk. One of the most widespread ST viruses.

LINK VIRUSES

Link viruses attach themselves to programs and infect your ST when you run these. **(See p 34.)**

CRASH
Works in the same way as PAPA AND GARFIELD (see below), but without the screen displays or sounds. After copying itself an unknown (possibly random) number of times, locks up your ST.

MILZBRAND
Looks at the current date in the ST and if that's set to 1987, erases the whole of track zero from the floppy in drive A. There are many versions of this virus, thanks to a German computer magazine which thought it would be a neat idea to print the virus, plus hints and tips on making it adaptable. The most common version prints "dies ist ein virus!" ("this is a virus") all through the bootsector, rendering disks useless. Also known as ANTHRAX ("Milzbrand" in English).

PAPA AND GARFIELD
Reset-proof; installs itself in your ST's memory when an infected program is double-clicked on. The virus then attaches itself to every program loaded afterwards. It shows itself by bleeping and printing a flashing pixel in the top left-hand corner of the screen. Also displays the message "Garfield and Papa was here." Only works correctly on STs with more than 1MByte of RAM, because of the way it addresses the screen memory. However, it may still damage files on any system, whatever the memory size.

ULURU
Attaches itself to programs and installs itself in memory when an infected program is executed. Once installed it infects any programs executed subsequently, providing they are on drive A or B and larger than 10,000 bytes. After a preset time, it creates a text file on disk containing the message "MAD Zimmermann will be watching you."

VIRUS CONSTRUCTION SET PART 2
This prints the message "You have 10 seconds to prevent a reset" before a countdown occurs. It then resets your ST, trashing whatever was running at the time. There are numerous versions of this virus, since it was available as a commercial DIY virus kit – another German company thought it might be fun to teach everyone how to write viruses. Vorsprung durch Technik, we don't think!

■ ***Ultimate Virus Killer*** **is yours free on this issue's Cover Disk. For more info, turn to the Cover Disk pages, starting page 22**

GASTEINER Technologies

Tel: +44 081 365 1151
Fax: +44 081 885 1953

COMPUTERS

Atari	
520STFM	POA
520STE (Turbo)	POA
520STE 1Mb	POA
520STE 2Mb	£349.00
520STE 4Mb	£429.00
1040STE 1Mb	£349.00
1040STE 2Mb	£429.00
1040STE 4Mb	£509.00
Mega STE	POA
TT	POA

MONITORS

Philips 8833 II	£229.00
Atari SM124	POA
Atari SC1224	POA

PRO MONITORS

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HOW DO THEY WORK?

Viruses are just little programs, often less than 512 bytes long. But size is unimportant. We've all seen the mess you can make with three lines of BASIC code. The old "HELLO. JIMMY IS A PRAT" program which fills a screen in seconds is an old favourite of pranksters in computer shops who type in the routine while the shop assistant isn't looking. In the same way, a virus is just a tiny program which shifts data from one place to another and maybe does a couple of extra tricks just for a laugh.

Usually the virus's main objective is to copy itself to any old disk you happen to put into the drive. There's nothing spooky about this – it's just what the program is told to do by the programmer. Here's a typical virus theory.

1 You turn on the ST, with a disk in the drive. You think the disk is normal, but hidden amid the data on it is the virus. The ST boots and seems perfectly normal, but during the boot-up the virus has been found by the ST's operating system. The ST is told to execute (load and run) the virus, because it looks like any other normal boot-program. The virus program takes control of the ST momentarily and usually copies itself into the ST's RAM, somewhere where it won't be wiped out if you press the reset button. Once it's safely inside the ST, the virus passes control

"A virus is just a tiny program, often less than 512 bytes long, which erases or shifts data and maybe does a couple of extra tricks for a laugh"

back to the ST's operating system – but only partial control. The virus is still in a position to intercept certain operating system functions, and divert control back to itself. So, by the time disk has stopped spinning, the virus has already gone through its first phase.

2 The second phase occurs when you put a different disk in the drive. Several operating system functions are called by the ST to examine the new disk. How else would it tell that you'd changed disks, or what the new disk's directory was? It's usually during this time that the virus intercepts the ST's disk functions and takes control again. The virus just tells the ST to copy the virus from memory to the new disk and then return control back to the operating system. All you see is the drive light going on and off in the usual way. The time taken for the copy is infinitely short (remember, the size of the virus is less than half a kilobyte), so you don't notice a thing.

3 The previous phase may be repeated endlessly, to the stage where your entire disk collection is infected and the virus is just writing itself over the top of old copies of itself. However, there's still enough space in half a KByte to do plenty of other things, and it all depends on the programmer's whim. Maybe he'll just crash your ST and print a silly message after ten successful virus copies have been made. Alternatively, he might be a real basket and decide to wipe the directory information from all cur- ➤



■ Mindscape's duplication plant. Under computer control, banks of Trace disk-copiers reproduce perfect images of the original master copy. If that master copy was clean, then viruses are impossible

WHAT THE SOFTWARE COMPANIES SAY...

The odds are against you if you think you can ignore viruses and get off scot free. Suppose one of your favourite games or utilities gets infected. Who're you gonna cry to? You can try begging for a replacement from the people who made it, but why should they help? After all, it was *you* who infected the disk, wasn't it? Here's a roundup of the response you can currently expect from some of the major players in the games and utilities arena.

Virgin Mastertronic (☎ 071 727 8070)
David Bishop – Product Manager
In the event that a product is virused by Virgin or its agents, Virgin announce this fact in the computer press, and distribute free virus-killers to customers who've suffered. The infected games are recalled and a re-duplication is carried out. If disks are infected by the customer, then Virgin is willing to replace them, charging a variable amount for post and packing – how much depends on the type of program and number of disks infected.

Palace (☎ 071 278 0751)
Richard Hennerley – Marketing Manager
Replacement for free if you return the disk and enclose an SAE.

Mirrorsoft (☎ 071 928 1454)
Paul Alton – Sales Manager
Return virused disks for replacement. Nominal £4 charge for replacement. If disk is less than three months old and has become corrupted (but not by a virus), it'll be replaced for free.

Mindscape (☎ 0444 246333)
Phil Harrison – Tech Support Manager
If the virus is Mindscape's fault (not much chance of this – they do their own duplication, in-house, under strict quality control) the disks will be replaced free for the lifetime of the software. If the virus infection is through your own fault, there's a small admin charge. Exactly how much depends on the software in question and the number of infected disks. Each case is examined individually, working on the basis that the charge for one disk is £3. Mindscape notify all customers who return infected disks, if the customer is unaware of the infection. They'll offer suggestions on prevention and eradication.

US Gold (☎ 021 625 3366)
Danielle Woodyatt – Marketing Manager
Return virused disks for full free replacement.

MicroProse (☎ 0666 504326)
Emma Garrett – PR Executive
Return virused disks for replacement. Nominal £6 charge for new set.

Silica Shop (☎ 081 309 1111)
Andy Leaning – Press Officer
Silica offer a free checking service for *any* disk you're unsure about. They'll even supply you with a free virus killer if you send an SAE (remember this bit or there's a £2 postal charge!) and a blank disk. Silica will also attempt to remaster any of your virus-damaged disks – generally applications and programs, but some games can be repaired too. Repairs to Silica-stocked titles are free. Non-Silica programs are also free, providing there are no extensive costs incurred during the repairs.

GST/Electric Distribution (☎ 0480 496666)
Ian Mackey – QA Supervisor
Return virused disk and GST will check it. They'll replace damaged disks but there's a postal charge if you infected the disks yourself.

HiSoft (☎ 0525 718181)
Keith Wilson – Tech Support
Return virused disks for replacement. Nominal charge of £5 to cover handling costs.

rently available floppies and hard drives. Or he might tell the virus to save "I'm a virus-programming pillock" end-to-end, a thousand times on the current disk, over the top of your precious files.

HOW CAN YOU RECOVER FROM VIRUS ATTACK?

Recovering from virus attack is at best painstaking, at worst impossible. That's not to say you can never get rid of a virus, but you may be in the situation where all your data is lost for good. A safe clean system is little compensation for having lost two years' work in an afternoon.

To purge your system of viruses, you need a virus killer. That's where Douglas Communications' *Ultimate Virus Killer (UVK)* comes in. You'll find it on the Cover Disk stuck to the front of this very issue. It's a slightly cut-down version of the very best virus killer available, a version of the same one used to check the Cover Disk master disks before they go to duplication. Its creator, Richard Karsmakers, has programmed it to recognize and destroy nearly 60 different virus types and detect whether a virus is currently active inside your ST's memory. Using this (or any other decent virus killer you may have) you can examine your disk collection to see which disks contain a virus. You must examine your *entire* collection, because if a *single* disk remains infected then *all* your disks are at risk.

"Viruses fall into two distinct categories, fundamentally different in the way they spread but both with the same destructive potential"

The best method is to sort your collection into categories without doing any virus-killing yet. The categories are:

- clean,
- infected games/autobooting,
- infected non-autobooting.

Obviously, you can put the clean ones back in their boxes and breathe a sigh of relief. These are best left alone, preferably write-protected (move the tab so you can see through the hole) if they still work in that condition. (Some don't – notably very early *ST FORMAT* Cover Disks, which need to write to the disk to change sides.)

Leave the games to one side, and check the ones which autoboot. Do they have an AUTO folder in the main directory? Here's the safe way to find out:

1 Get a formatted, virus-free, blank disk and open the write-protect hole
2 Mark the blank disk "CHECK," so you don't get it mixed up with the others
3 Turn off your ST
4 Insert the CHECK disk
5 Turn the ST's power back on
6 Wait for the Desktop to appear and the drive light to go off
7 Eject the CHECK disk
8 Insert your virus-infected autobooting disk
9 Open a window for Floppy Drive A by double-clicking on the icon
10(a) If the ST can't read the disk or it comes up with "0 bytes free in 0 items" this means the disk is copy-protected and probably has an executable bootsector. Put these in a separate pile for repair later.
10(b) If the window opens but there's no AUTO folder in the main directory this means the disk uses the executable bootsector to auto start one of the other programs on the disk. Put these in the same pile as the ones in 10(a) above.
10(c) If the window contains an AUTO folder, this means that the disk does *not* have an executable bootsector. It boots using a different auto-start mode which does not involve the bootsector. These disks may be safely disinfected without stopping the autoboot facility. Eject the infected disk, insert your *UVK* disk and run the virus killer. Re-insert your infected disk and select the option to kill the virus. Then pop out the disk, and move it to the clean pile.
11 Close the window and go back to stage **8,** using your next infected disk.

When you've cleaned all your AUTO folder disks, this leaves the non-autobooting disks untouched. These can safely be disinfected by running them through *UVK*, one after the other.

WHAT'S SPECIAL ABOUT GAMES DISKS?

You should now have only the games disks and the disks with executable bootsectors left to deal with. These are more difficult to disinfect, because of the way they work. Most games use a special feature of the disk's bootsector to make them load and run automatically. The disk's first sector holds three main types of data which enable this.

■ **The first two bytes** on the disk are the execute flag, which tells your ST whether there is a valid boot-program stored in the bootsector.
■ **The second block of data** contains all the information the ST needs in order to read the disk. These are things like the sector length, the number of sides, the disk's name and so on.
■ **The third data block** is where the boot program is stored, if one exists. You can't find it without using a sector editor like *Knife_ST* (£34.95, HiSoft ☎ 0525 718181), and it doesn't appear in any disk directory. That's why this area is used to store viruses in, as well as genuine boot-programs.

The problem is that game disks often end up having their legitimate boot-programs over-written by viruses, which then makes them useless. You can't usually get the game running from the Desktop (because all the files are hidden, for copy-protection reasons) and so you're stuck.

Or are you? *Ultimate Virus Killer's* repair function contains images of the most popular game bootsectors, thus enabling you to replace the missing or damaged blocks needed to get the game going again. You can examine this feature in the Cover Disk version, but you need to obtain the full version in order to actually repair game disks. (It's £9.95 from Douglas Communications ☎ 061 456 9587.)

WHAT'S THE DIFFERENCE BETWEEN BOOT AND LINK VIRUSES?

Viruses fall into two distinct categories: bootsector viruses and link viruses. They are fundamentally different in the way they spread themselves, but they both have the same destructive potential.

■ **Bootsector viruses** exploit the legitimate auto-booting capability that Atari provide in the standard ST disk format (see the section on games disks, just above, for a more detailed description). This is readily detectable (with a virus killer), but causes many problems with legitimate auto-booting disks.

■ **Link viruses,** on the other hand, attach themselves to individual program files rather than disks. This means you can have many viruses on a single disk. To cleanse your system you need to check each and every file on *all* your disks – a much more daunting prospect! Once link-infected files are loaded and run, the virus becomes installed in memory and then links itself to any programs which are subsequently loaded and run. Link viruses are far more dangerous than bootsector viruses, but have surprisingly been overlooked by most virus-killers. *UVK* however can recognise and destroy them, so it's worth checking out your collection while you still can!

"Using Ultimate Virus Killer (from the Cover Disk), examine your entire disk collection. If a single disk remains infected, all your disks are at risk"

WHERE DO THEY LIVE IN THE ST?

When a virus successfully manages to install itself from disk into your ST's memory, it then starts its work in earnest. You might think that pressing the ST's reset button is enough to clear it from memory and cleanse your system. You'd be right in about 50% of cases, but just as many viruses are completely unharmed by the reset. Why?

If a virus is well-written, it can alter various elements of the ST's operating system, especially the reset vector. This contains an address to which the ST leaps when you press the button. The program at this address clears all the RAM and re-initialises much of the ST system before re-displaying the Desktop. If this address is changed, then your ST's own reset routine is diverted. If it's diverted back to the virus itself, your ST can be conned into clearing all the data below the virus, leaving the virus fully functioning.

HOW ARE THEY DETECTED?

UVK and most other virus-killers look for the auto-execute flag on the disk as the first clue to virus infection. If this is set, then the boot-program

WHAT TO LOOK FOR

Like to know what to watch out for? On Cover Disk 24 *ST FORMAT* gave you *Flu* – a handy little program that simulates exactly what happens to your ST when certain disk viruses reach their "deadly" phase. However, it does this without actually infecting your ST or causing any damage whatever. It contains no viruses and is not a virus itself – it simply imitates the effects of some viruses to demonstrate what could happen if you're careless and let something slip through the *UVK* net. If you're curious but missed issue 24, simply turn to page 110 for full details of the *FORMAT* back issue service.

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area is scanned for certain key ASCII codes which correspond to known viruses. If there's a match, then there's a virus. If not, then the boot-program is analysed to see if it addresses any important system variables. If this proves positive, then it's probably a new virus, and you'd be well advised to send it in for further analysis (see the panel to the right).

Link virus checks involve testing individual programs for giveaway ASCII codes which fit the pattern of known viruses. If nothing matches then the program is probably clean, but there's no guarantee. Unlike with bootsector viruses, there is no easy way of analysing every program to see what it does to the ST's system.

"You can minimise the risk of virus infection just by altering your boot-up procedure. Follow our advice and you can be safe from bootsector viruses forever"

KEEP ONE JUMP AHEAD

There is a way you can minimise the risk of virus-infection, just by altering your boot-up procedure. There's no messing about with hardware, no program-writing or complex techie-stuff. Just follow these basic steps and you should be safe from bootsector viruses for ever.

1. Check your *entire* collection, at least once, and eradicate any viruses you find (see the section headed "How can you recover from virus attack?" above for the easiest way of doing this).

2. Write-protect all your disks by opening the little holes in them. Some disks do not work correctly unless they're write-enabled, so you have to leave these alone. Protect the rest and you'll still be better off.

3. Whenever you boot your ST (by turning it on), make sure that the disk in the drive is a clean one. This ensures that there's no virus present in your ST's memory.

4. Whenever you finish using a program and want to load another, don't use the reset switch. Turn the ST completely off and leave it off for about 30 seconds. This clears everything from the memory, viruses included. Then boot up your ST again, using the disk with the desired program on it.

5. As you obtain new disks, check them. Use *UVK* to give them a thorough examination and then write-protect them. If you do this before loading or booting the new disk, there's no way you can be infected by a bootsector virus. ***stf***

WHERE TO GO IF YOU DISCOVER A NEW ONE

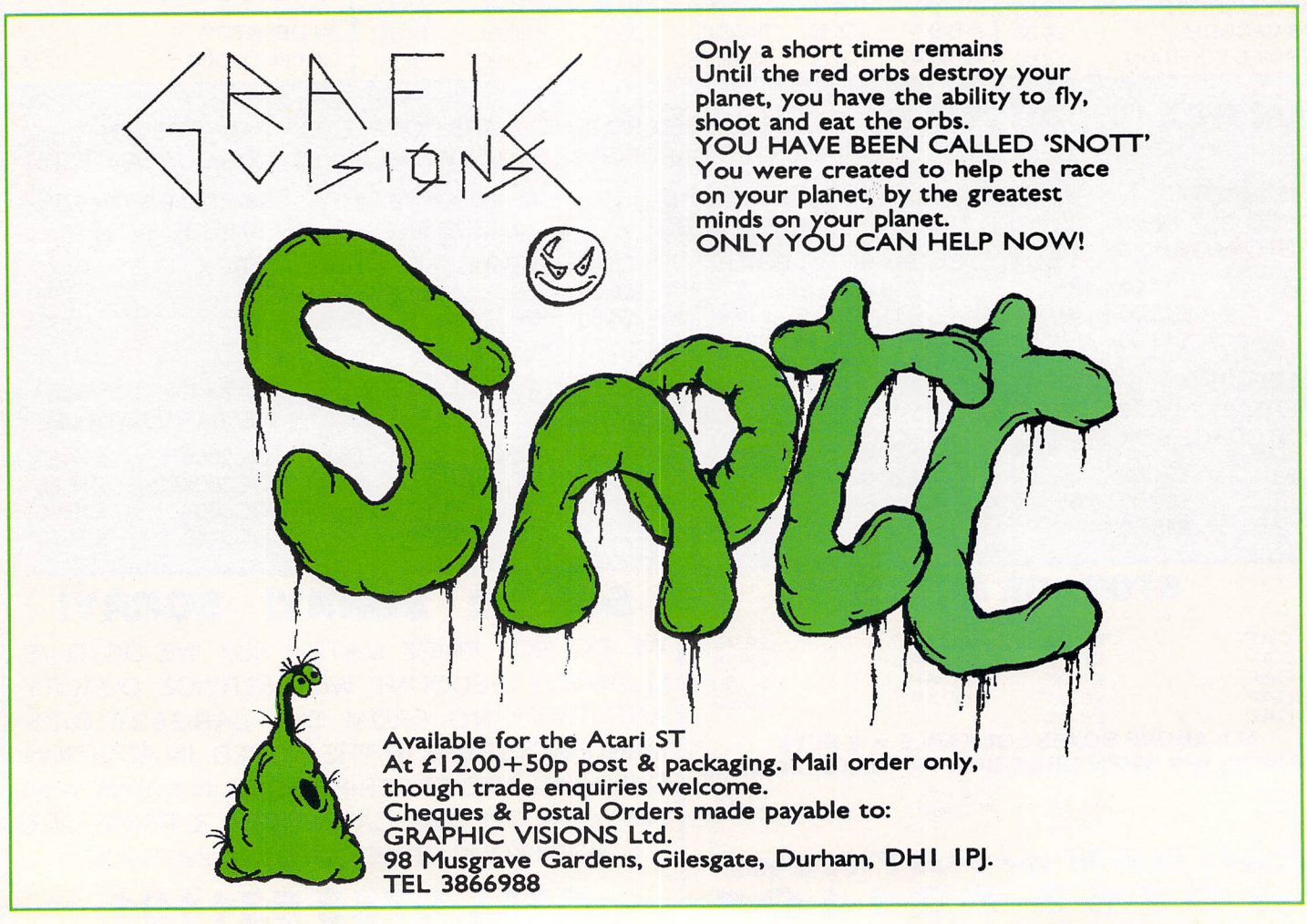
If, during the course of your virus-extermination process, you encounter a message which tells you there's an unknown virus on your disk, you can send it off to have it examined. Douglas Communications and Richard Karsmakers are continually improving *UVK*, and they can only do this with your help. Since new viruses appear all over the place, there's no guarantee that Richard will get to see them before you do. So, if *UVK* gives you the option to write a bootfile to a blank disk, do so! Then pop it in a jiffy bag and send it to Douglas Communications, PO Box 119, Stockport, Cheshire SK2 6HW. Who knows, you might save someone else's data!

HOW WE KEEP IT CLEAN

The *ST FORMAT* Cover Disk is guaranteed virus-free. Every month, *STF's* Tech Ed creates the master disk from which all copies are taken. He tests each and every file for viruses using the *Ultimate Virus Killer's* Link viruses search mode. If all is well, he checks for bootsector viruses. Two copies are then made from this perfect disk. These are also given the bootsector check, just to make absolutely sure.

The original master disk is locked away safely and the other two are sent to Discopy Labs, the duplication house where the Cover Disk is mass produced. But the virus-checking process doesn't stop there. Discopy run their own checks using *UVK*, both before duplication begins and at random during the process.

During the very first production run, five disks are taken at random from the production line and returned to *ST FORMAT* for further testing. Both bootsector and link viruses are searched for on all five disks. If everything's clean, Discopy are notified and the main production run begins in earnest. That way we *know* it's safe, and you can depend on it.



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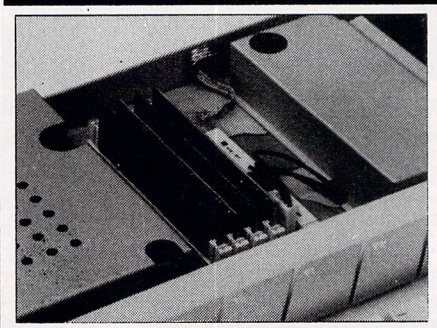
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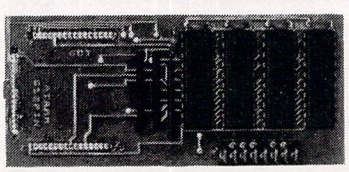
- ✔ Fits STF, STFM and MEGA series computers
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N.B. Due to the large variance in design of the Atari ST, there is a small minority of boards in existence which may require a little soldering.

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Please note: Not suitable for STE machines

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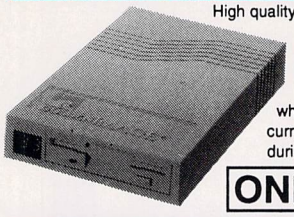
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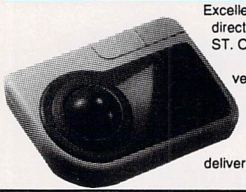


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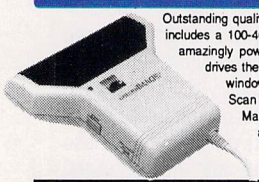
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Not just another word processor...

Need more than an ordinary text-only word processor? Calligrapher, the "document processor," has more features than a porcupine has spines. But does that make it as hard to handle? Tim Anderson investigates

Calligrapher

MACHINE: ALL STs with 1MByte
(Junior version runs on 520ST)
PRICE: £139 (JUNIOR VERSION £69)
FROM: WORKING TITLE
CONTACT: 0865 883233

Text-only word processors are boring. Now people are discovering that they can get multiple fonts in multiple sizes, graphics, boxes and lines into their documents, by using a graphical word processor. These have been around on the ST for some time – ever since *Signum* amazed everyone with its laser-like output from dot matrix printers – but now there's a bewildering choice confronting the more ambitious ST owner. One of the most powerful packages currently available is the wizard *Calligrapher* WP – and there's even a well-featured "Junior" version for the budget-conscious, so we're not talking millionaires-only.

Calligrapher comes with an impressive 350-page manual (produced by the software on a Canon Bu... disks, and a quick r... a hassle, and requir... ts of disk-swaps – ... forget the blank disk ... hout copy protection ... n Working Title and ... from the new disk they send you. But you do get three extra fonts and a thesaurus for your trouble.

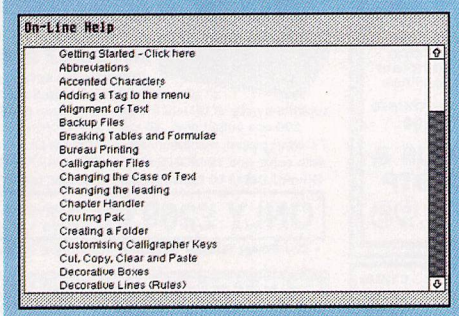
1991_08_Issue_025_ST_Format

"You ... t but multiple fonts in multiple sizes, graphics, boxes and lines with a graphical word processor"

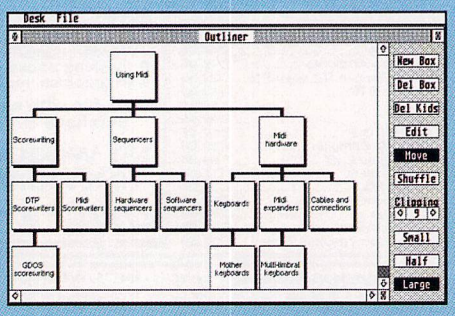
Calligrapher doesn't just have heaps of impressive features – it has an amazing number and variety of them. For example, an innocent-looking "Import *Degas/Neo*" option not only enables you to use graphics in these two formats in your documents, but it takes you into a sub-program with an array of options for dithering, cropping, smoothing, lightening or darkening the picture. Pull down the font menu and you find slots for up to 33 fonts in 19 pre-set sizes, with the opportunity to set your own. "Display options" allows for three different kinds of intra-word justification – adjusting the space between letters; most word processors only adjust the space between words. And that's before you get to the profusion of add-on "paks" – supplementary programs which integrate with *Calligrapher* to give even more options. This is some program!

At the heart of *Calligrapher* is good old GDOS – that's right, the notoriously clumsy and convoluted graphics software which Atari use and programs like *Timeworks DTP* and *Easydraw* depend on for fonts, printer drivers and such. But this is GDOS with a difference. Ordinary GDOS uses bit-mapped fonts: fixed images of each character are stored in vast font files, and you either use the size supplied or put up with nasty jagged letters when the fonts are scaled. Now the boffins at Working Title have come up with an add-on to GDOS that does away with all that. Called

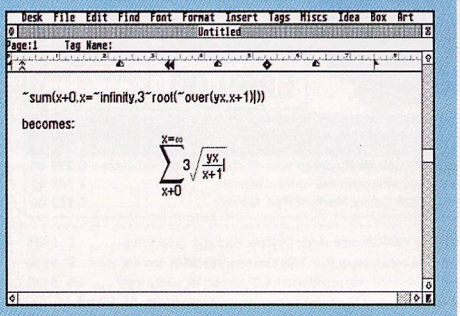
FEATURES GALORE, AND HELP IN FINDING THEM



■ **Not only is there a dazzling range of features, but *Calligrapher's* excellent on-line help facilities make it easy to find your way around them**

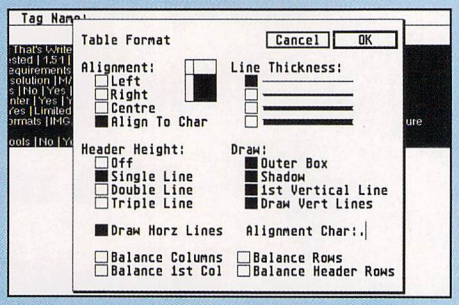


■ **Among the most impressive features is the amazing graphical outliner. Move the boxes around wherever you like and the text moves with them**

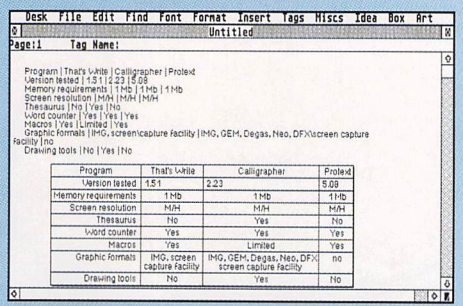


■ **Mathematicians are catered for: set up a formula by describing it with *Calligrapher's* formula code and it transforms into mathematical notation**

THE FINE ART OF TABLE-MAKING – THE EASY WAY!



■ **Making tables has never been easier. All you have to do is write out your data using special characters to separate the boxes, select the whole lot as a block, then set the parameters of your table...**



Program	That's Write	Calligrapher	Protext
Version tested	1.51	2.23	5.08
Memory requirements	1 Mb	1 Mb	1 Mb
Screen resolution	M/H	M/H	M/H
Thesaurus	No	Yes	No
Word counter	Yes	Yes	Yes
Macros	Yes	Limited	Yes
Graphic formats	IMG, screen capture facility	IMG, GEM, Degas, Neo, DFX screen capture facility	no
Drawing tools	No	Yes	No

■ **Using the parameters you have set to define the format of your table, *Calligrapher* does all the hard work and draws a table for you. As the example at right demonstrates, the results are excellent**

■ ***Calligrapher's* features compared with those of two of the leading WP packages for the ST – in a table entirely created in *Calligrapher* itself. At least in that department, it leaves the others standing!**

Program	That's Write	Calligrapher	Protext
Version tested	1.51	2.25	5.08
Memory requirements	1 Mb	1 Mb	1 Mb
Screen resolution	M/H	M/H	M/H
Thesaurus	No	Yes	No
Word counter	Yes	Yes	Yes
Macros	Yes	Limited	Yes
Graphic formats	IMG, screen capture	IMG, GEM, Degas, Neo, DFX,screen capture	no
Drawing tools	No	Yes	No
Mathematical formulae	No	Yes	No
Save block	Yes	No	Yes
Table making facility	No	Yes	No
Paragraph tagging	Yes	Yes	No
Outliner	partial	Yes	No
Mix graphic and printer fonts directly	Yes	No	No
Mail merge	Yes	Yes	Yes
Footnotes	Yes	Yes	Yes
Page preview	No	Yes	Yes
Multiple fonts	Yes	Yes	Limited by printer
Scalable fonts	No	Yes	No
Sloping and curved text	No	Yes*	No
Label facility	No	Yes*	No
Indexing facility	Yes	Yes*	Yes
Cross references	No	Yes*	No
Autosave	Yes	Yes*	Yes
Maximum documents open at once	2	7	36
Import files	ASCII, 1st Word Plus	ASCII, 1st Word Plus, DIF	ASCII, 1st Word Plus, Wordstar
Export files	ASCII	ASCII	ASCII, 1st Word Plus Wordstar
Multiple columns	Yes	Yes	Yes
Chapter links	Yes	Yes	Yes
Time to spell check 1000 word document †	25 secs	2 min 30 secs	22 secs
Time to print at 180 dpi †	2 min	5 min	n/a
Time to print at 360 dpi †	3 min 30 secs	18 min	n/a
Time to print at 300 dpi †	2 min	4 min 45 secs	n/a
Price	£99.95	£139.00	149.00

Note: Features marked * are available in Calligrapher add-on "paks" at extra cost.
Note 2: Timings marked † will vary according to hardware configuration, and the length and complexity of the document. Page printed was a full page of text.

Line_arc.prg, it enables *Calligrapher* to use vector fonts – storing not characters themselves but the instructions for drawing them, so they can be scaled without the risk of resolution errors. Choose any point size you like – the bigger they are the better they look – up to 128 point. That's about six words on a sheet of A4 paper.

Calligrapher's use of GDOS does bring a number of benefits. If you've already got a collection of GDOS fonts (and there some excellent PD ones around), you can use them in *Calligrapher*. What's more, *Calligrapher* comes with a special version of *G++*, the Codehead Software GDOS replacement which makes any GDOS application faster and more responsive. Working Title have developed much speedier new GDOS printer drivers, including drivers for the BJ-10e and the HP Deskjet inkjet printers. (For details of these and other printers – and an explanation of what printer drivers are all about – see last issue's mammoth printer roundup. If you missed that, see page 110.) Best of all, get the stunning add-on *FlexText* Pak (see page 44) and you can use remarkable text effects in *Calligrapher* or in other GDOS programs like *Timeworks DTP*.

USING *CALLIGRAPHER*

Like any highly sophisticated program, *Calligrapher* takes time to get to know. However, familiar GEM windows, menus and more or less standard mouse controls make life easier. The tutorial in the manual is well worth going through, but even the tutorial doesn't cover the full range of features. Still, you can't judge software by how many features it has, any more than you can judge a car by how many lights there are on the dashboard. The question is, what is *Calligrapher* like to work with? Which of the abundant options are any good in practice?

"Calligrapher's vector fonts really do work – output on a laser printer or inkjet is outstanding"

Starting with the good news, *Calligrapher's* vector fonts really do work. Output on a dot matrix is good; on a laser printer or inkjet, outstanding. Being able to set the exact font size you want is a wonderful luxury, especially for headings. Also wonderful is the automated table-making feature. Elegant tables in impressive shadowed frames are laughably easy: just type out the information, select "Make a Table," and *Calligrapher* does the rest.

Mathematicians are sure to love the formula-making facility, which works in a similar way. Another highlight is page preview – an accurate, miniature view of from one to eight consecutive pages. And *Calligrapher* is one of the very few ST word processors to handle multi-column printing in a sensible way: you can have columns of different widths on the same page, and they appear side-by-side on screen in true WYSIWG fashion – What You See Is What You Get. Brilliant.

Does all this spell the end for rival word processors? No: there are some snags. First and most important, speed. Working with *Calligrapher*, you have to get used to some finger-➤

CALLIGRAPHER JUNIOR: WHAT'S THE DIFFERENCE?

At half the price, *Calligrapher's* little brother has a lot going for it. With multiple vector fonts, thesaurus, graphics, footnotes and multi-column facilities, it's not short of features. So what's been left out? Mail merge, automatic tables and formulae, the outliner and chapter handling are the main absentees; also, *Calligrapher Professional* (the full version) supports laser printers and high-resolution inkjets. You pays yer money...

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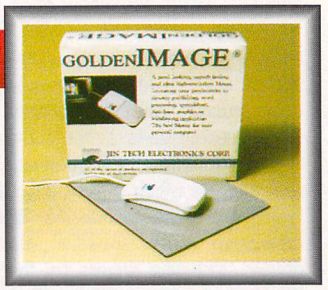
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tapping pauses. Screen update while you're typing is a little lazy, though tolerable. But some operations seem to take an age – inserting a ruler, adding a footnote or a header, or using page preview, for example.

A wait of a few seconds may not seem much, but the overall effect is to considerably increase the time it takes to produce a document – not good if you have a lot of work to get through. And the slowness of the spell checker is rivalled only by the equally snail-like *Fleet Street Publisher 3's:* two to three minutes to check a typical 1,000 word document, and even longer if you're running from floppy disks. For comparison, *Protext* takes around 20 seconds.

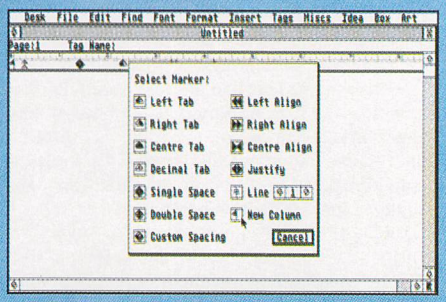
There's speed of printing to consider as well, which varies a lot from one printer to another. Owners of the Atari laser will be happy, but printing at 360 dots per inch on a 24-pin printer is not for those in a hurry. Even at the recommended 180 dpi, three or four minutes a page means stopping for lots of cups of tea.

It's lucky, then, that there is a "text-only" mode, which turns *Calligrapher* into a common-or-garden word processor using whatever fonts happen to be built into your printer's ROM. It's certainly a great deal faster (and results in faster screen scrolling as well), but it's not ideal: to get even simple effects like bold or italic when you're in "text-only" mode, you have to work out the correct printer codes and enter them into a "Set Text Printer" dialogue box – which may be all right for hackers, but modern software shouldn't require that sort of effort.

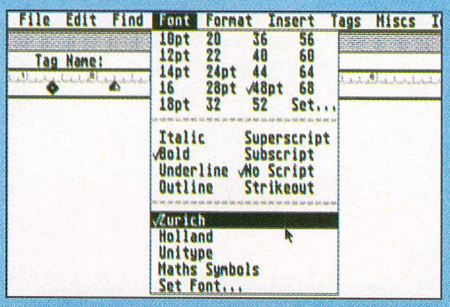
It also seems strange that with all its features, *Calligrapher* has no "overwrite" mode –

IMITATION IS THE BEST FORM OF TEST

A good test of any DTP software – or near-DTP, like *Calligrapher* – is to try to reproduce a page from a modern, professional magazine... *ST FORMAT,* for example. We begin by choosing a page from the July issue, number 24



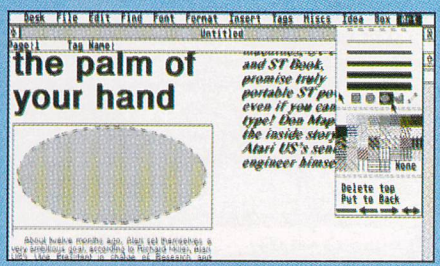
1 The first task is to set the basic page layout with this dialogue box – determining tabs, justification and where a new column begins



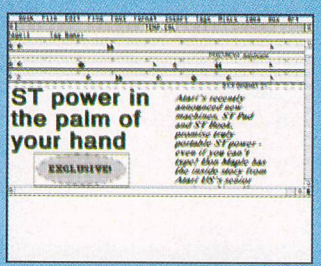
2 Next comes setting the font for the headline. A 48 point, bold, Zurich font should do nicely. It's a vector font version of Atari "Swiss"



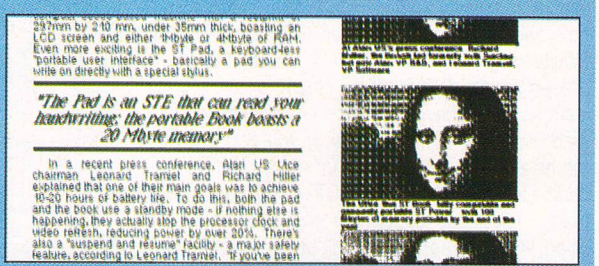
3 The page takes shape. The text is all in, and set up in the right fonts and sizes – but how about some graphics to liven the page up?



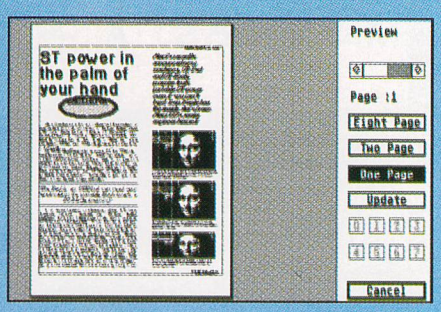
4 Creating an eye-catching text bubble is easy with the built-in *Calligrapher* Art tools – readily accessible and straightforward to use



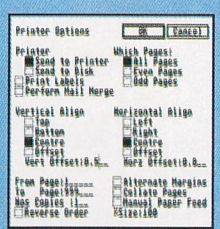
5 Each header or footer has its own ruler, making the screen look over-busy and confusing



6 Adding a "call-out" or "pull-quote" from the article between two lines adds interest. The pictures have to be in IMG or GEM format, but *Calligrapher* offers heaps of conversion facilities



7 Page preview is a handy way to see what the page should look like in print. Impressive, especially considering that *Calligrapher* is really a fancy word processor, not a DTP package



8 Finally, to print. The options available here include a scaling routine, handy for fitting the page to the size of your paper, making posters or printing on postage stamps





■ The *Calligrapher* version compared with the original. *Calligrapher* is not as flexible as a true DTP package, so to fit in the headline *ST FORMAT*'s three-column page must be simplified to two. What do you think?

there is no way to set it to overwrite the text under the cursor rather than insert new text. And even in text mode, *Calligrapher* is sluggish compared to dedicated text-crunchers like *Protext*.

There are other niggles. *Calligrapher* inserts rulers at the drop of a hat: every header, footer or footnote has its own ruler. The result is a very messy and confusing screen... but selecting "Hide Rulers" in the hope of simplifying it prevents a number of vital formatting tasks. There are problems with the leading (inter-line spacing), which is often too tight at the default setting. And more seriously, *Calligrapher* is not as "solid" or reliable as some ST programs. While we were testing it, the program once bombed out completely; on one occasion something caused text to disappear when resized; another time, the footers printed out backwards in text-only mode. Screen corruption is common, although usually not permanent. Quitting and re-running the program often improves matters, but this sort of thing is a worry.

"There are some snags: even in text mode, Calligrapher is sluggish, and it's not as reliable as some ST programs"

That's enough bad news. *Calligrapher* is still magnificent – and that's without mentioning the unique graphical outliner, the style-tagging, the box and art tools, the macro-like abbreviation facility or the foreign language dictionaries. For presentation documents, small posters and leaflets, party invitations, or smart letters and memos, *Calligrapher* is ideal. If you can live with the hassles, the quality of print is as good as anything else available on the ST – and better than many. Telephone support from the suppliers is good, and the program is still being developed. If you want to try it first, Working Title have a good demo disk and a smart brochure which doesn't cost a penny. Give them a ring and they might just let you have one. ***stf***

FORMAT RATINGS

CALLIGRAPHER/£139
Working Title/0865 883233

Features **95%**
A phenomenal array of versatile tools

Speed **70%**
For a DTP package, fair. For everyday word processing, frustratingly sluggish

Ease of Use **80%**
Good use of GEM makes life easier, but the complex features and mysterious bugs take getting used to

Results **93%**
When you get there, the printed output is first class

***FORMAT* VALUE** **89%**
With just a little more development, could earn Gold

The Competition
There's nothing quite like it. *That's Write* (£99.95, Compo ☎ 0480 891819) is faster and more stable, but without *Calligrapher's* scaleable fonts. *Signum 2* (£184.00, Signa ☎ 0252 341600) is old and expensive, but very fast and well-supported. If it's a fast text-cruncher you're after, you can't beat *Protext* (£149.95, Arnor ☎ 0733 68909)

UNWRAPPING *CALLIGRAPHER'S* "PAKS" – THE ADD-ON EXTRAS

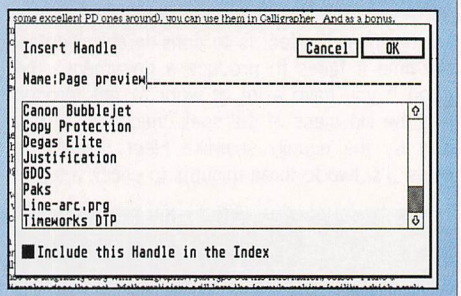
Labels £18.00

Most databases have a label printing facility, usually used for printing addresses onto continuous labels. This "pak" gives *Calligrapher* the same ability, with the advantage that graphics and multiple fonts can be used. There is also a very flexible numbering system. It works well, and could be handy for mailing out fanzines or for PD libraries wanting to label disks – but how many others are likely to need it?

***STF* Rating – 75%**

Indexer £18.00

This "pak" has two functions. As you'd expect, it automates the creation of an index, which could be useful for technical or academic documents. Clever stuff, but it does require laborious work to set up. You must select every occurrence of every word which is to go in the index and tag it with a "handle" so the indexing system recognises it. This is probably slower



■ "Insert handle" isn't the solution to an adventure game – it's the *Calligrapher* indexer at work

than making an index by hand, but it has the advantages of accuracy and automatic updating if the document undergoes further editing.

The second function is cross-referencing. If your document is stuffed with comments like, "See page 23 for the full explanation," then the indexer can automatically ensure it's the right page number. Could save some frustration, and would be ideal for software manuals!

INDEXER.CPK comes with AUTOSAVE.CPK, which saves documents to disk automatically after a set interval – usually a good precaution. But this really should have been included as part of the basic package.

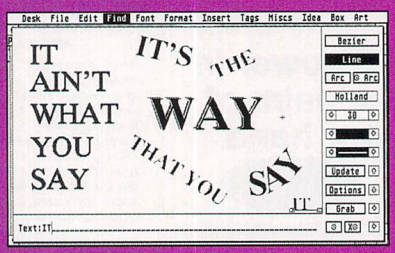
***STF* Rating – 80%**

BEST OF ALL IS FLEXING YOUR TEXT

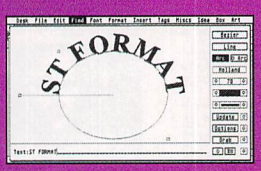
FlexText £25.00

Of all *Calligrapher's* tricks and treats, this is the best. It's a text manipulation package, for creating headlines, logos and text effects. Text can be wrapped round curves, sloped or drawn using one of the GEM fill styles as the "ink." The "grab" facility means that text effects can be combined and repeated within one piece of artwork. *FlexText* saves a GEM file which can be used by *Calligrapher* and by other GEM packages like *Timeworks DTP*. Effects like these required *Calamus, Outline Art,* and a second mortgage until *FlexText* came along. Anyone who produces posters, leaflets or magazines is sure to use it constantly. It can be run independently of *Calligrapher,* but sadly, it doesn't work with licensed fonts. Overall, wild and wonderful.

***STF* Rating – 95%**



■ The *Calligrapher* FlexText pak is ideal for just playing around with text...



And for creating logos...

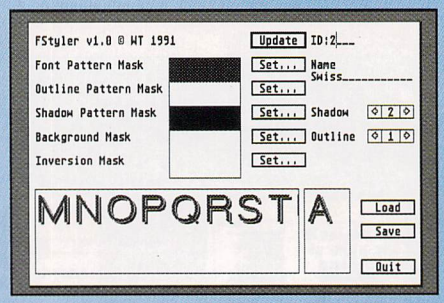
And the finished artwork goes nicely into *Timeworks* as a GEM file



FStyler £25.00

In case the supplied *Calligrapher* fonts are not to your liking, *FStyler* enables you to add shadows, outlines and new fill patterns to either GEM fonts or *Calligrapher* vector fonts. It's a neat utility, but a lot less fun than *FlexText,* and a simple GEM font editor is supplied anyway with the basic *Calligrapher* package.

***STF* Rating – 85%**



■ Extra fonts are available from Working Title, or you can create new fonts with the *FStyler* pak

Dictionaries £25 each

For all your mixed language documents, *Calligrapher* offers three supplementary dictionaries, French, German or Spanish, with around 200,000 words in each. You can get the spell checker to use different dictionaries for different parts of the document. Unfortunately, spell checking in German is just as slow as it is in English.

***STF* Rating – 70%**

Fonts £18 each

Extra fonts are available from Working Title, with Teutonic names like Vag Rundschrift and Weiss Rundgotisch. Seven are available now, with a further 240 promised. Sadly, *Calligrapher* fonts are not compatible with other vector fonts like *Calamus, Fleet Street 3,* or *Postscript.* Come on, folks – how about a font converter?

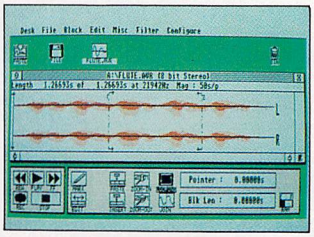
LOOP JOIN ● LOOP CROSS FADE ● REVERSE ● FADE ● VOLUME ● LOOP ● DELETE ● CLEAR ● FILL

CHANNEL SWAP ● CHANNEL COPY ● CHANNEL CROSS FADE ● SAMPLE PAN ● SAMPLE ● PRE-SAMPLE

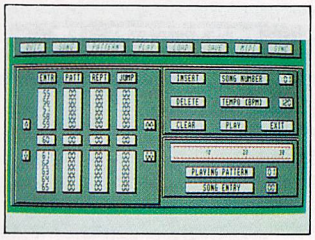
NEW from MICRODEAL

STEREO REPLAY

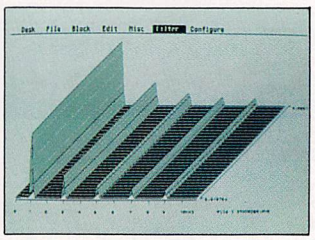
STEREO SOUND SAMPLING & OUTPUT CARTRIDGE



REPLAY STEREO EDITOR



STEREO BEAT DRUM MACHINE



FAST FOURIER TRANSFORM DISPLAY

microdeal

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Now from Microdeal, the first ever **STEREO** sound sampler for the **ATARI ST** range of computers. With the superb high quality reputation of **ST-REPLAY**, this completely new hardware cartridge contains **DUAL** Analogue to Digital and **DUAL** Digital to Analogue convertors to ensure the **ULTIMATE** in **8 BIT** sample quality. The system can record in high quality **STEREO** from its twin **PHONO** input sockets, taking sounds from any suitable **STEREO** equipment such as Portable Cassette or C.D. players or from any other 'Auxiliary' or 'Line level' source. The twin **PHONO** outputs provide the user of a standard **ST, STF, STFM** or **MEGA** computer, with high quality **STEREO** output. Users of the **STE, MEGA STE** and **TT** machines are not left out either ! The software will allow samples to be played out from the connectors at the rear.

As you have come to expect from **MICRODEAL** and Audio Visual Research, the **SOFTWARE** provided with the system is also packed with new features. **STEREO REPLAY** does not just set the standards by which other samplers are measured, it has **COMPLETELY** re-defined them!

The **STEREO EDITOR** program provides the user with the ultimate in power and sophistication, packed with features which appear for the first time on **ANY** home computer. This fully **DESKTOP** and **WINDOW** styled program allows individual samples to be loaded into the computer and edited separately. However, this is just the beginning. The program will allow the user to load in samples of **8, 12** or even **16 BIT** resolutions in **MONO** or **STEREO** formats and freely convert between them. It is possible to take a cutting from a **16 BIT MONO** format sample and edit it into a **STEREO 8 BIT** sample without even realising that the two sample files were different, the program manages all of the sample translations quite automatically !

The ULTIMATE STEREO SOUND SAMPLER

The **STEREO EDITOR** supports many useful editing functions including Mark, Hide, Cut, Paste, Insert, Delete, Clear, Fill, Overlay, Repeat, Gap, Reverse, Fade, Volume, Loop, Loop Join, Loop Cross Fade, Channel Swap, Channel Copy, Channel Cross Fade, Sample Pan, Sample, Pre-Sample, Play, Monitor, Scope Left or Right, Load and Save and more !

As if the list above was not impressive enough, the **STEREO EDITOR** can also perform more advanced forms of editing such as frequency 'Re-Sampling', Sample **FOURIER** analysis, Digital filtering, Digital Hall, Room, Echo, Reverb and Flanging effects, Play up to 10 different samples from an external **MIDI** keyboard or sequencer and **MUCH, MUCH** more.

The **'STEREO BEAT'** program can load **KITS** of up to 15 different samples into memory at once and then play 3 channel (**LEFT, CENTRE** and **RIGHT**) sounds out from the **STEREO PORTS** of the cartridge at the same time. Memory permitting, **KIT** samples can be up to 1 MByte in length **EACH**, permitting the user to record sections of their favourite music and completely **RE-MIX** them using **STEREO BEAT**. Patterns of **BEATS** are arranged on a grid format **PATTERN EDITOR** and can be varied from **4** to **32 BEATS** in length with timing set to 1/8, 1/16 or 1/32 with or without Triplets. **SONGS** are constructed from simple lists of **PATTERNS** with **LOOPS** and **SONG POSITION JUMPS. A SONG** can contain up to 99 separate song entry steps whose tempo can be varied from 40 to 239 B.P.M. STEREO BEAT can act as **EITHER** a **MIDI SLAVE** or **MIDI MASTER** and can both generate or respond to **MIDI START, STOP** and **SYNC** commands.

The **STEREO REPLAY** system is also supplied with routines and examples of code which enable the user to play **8 BIT MONO** or **STEREO** samples recorded and edited with the system from Machine Language or from High level languages such as **HISOFT, GFA** and **STOS BASIC.**

What more can you possibly need ?

STEREO REPLAY ORDER FORM

STEREO REPLAY IS £89.95 POST & PACKING £1 (ALL PRICES INC V.A.T)

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RIVERDENE PDL

30a, School Road, Tilehurst, Reading, Berkshire RG3 5AN

Tel: (0734) 452416 Fax: (0734) 451239

DEMOS

ST194 The Union Demo
ST747 V8 Music v2
ST836 (D/S) Syntax Terror
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"Left winger, that Andy Hutchinson," said Greg, smiling like a swarthy Etruscan garbage man with a Polo up each nostril, "you can't trust one of 'em." Then, savouring the lovely minty smells wafting up his nasal passages, he muttered: "At least they can't get their claws on any of my Public Domain software." With that he laughed manically, pulled the strait jacket tight around his warty body and hopped towards the lily pad

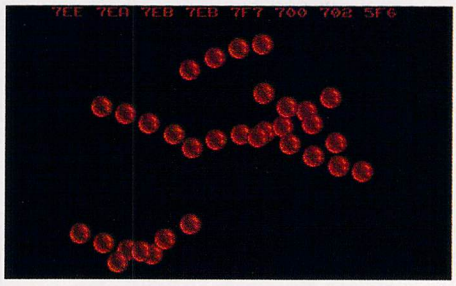
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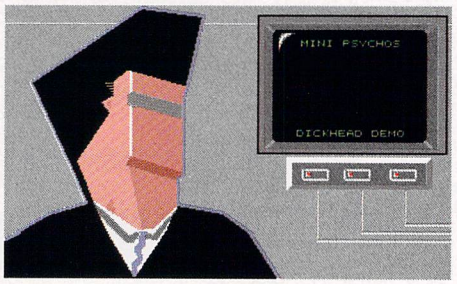
Goodmans – Disk GD1204

The Total Chaos group present this megademo and, while they seem to grasp the mechanics of demo writing, they can't get the hang of originality. You've seen it all before. High points include some great sample edits and a well thought out main menu screen – but beyond that, expect ball-cubes, rasters, parallax and glum chip music. The committee's still sitting on this one.

***STF* Rating – 55%**



■ **Yep, it's more of those wibbly, wobbly, boring balls. Programming technique: 7/10; Originality: 1/10. The *Double Doozer* does it again, and again, and...**



■ **This is the universe – big, isn't it? *The Mini Psychos Dickhead Demo* takes mickey-taking to a new low, but then you knew that already, didn't you?**



■ **The true story behind Robin's sudden, mysterious demise: "Listen, Batman, I've been meaning to ask: why *do* we wear our underwear over a pair of tights?"**

MINI PSYCHOS DICKHEAD DEMO

Riverdene PDL

Inspired (it says on the disk) by the *Decade* demo, this demo has three deliberately crappy screens which owe much to the first-attempt club. The quality of the samples betrays the fact that this is one coding club having a go at another. We can't tell you which because we couldn't be bothered to find the "hidden" screen. Sort of dickheadish really.

***STF* Rating – 45%**

BATMAN, HEADBANG & TCB TRACKER DEMO

Persistence of Vision – Disk 50

Another POV compilation. *TCB Tracker: FORMAT* Gold and a demo in issue 16 (for back issues, see page 110). *Batman:* a nifty sampled job – not just a recording but a re-edit from the TV series. *Headbang:* very puzzling. A series of heads waft up and down the screen and, er, headbang. Some notable celebs in there, and fun for about 120 seconds.

***STF* Rating – 56%**

MAX HEADROOM & JUST FOR MONEY

Persistence of Vision – Disk 70

The POV packing team have collated some groovy demos and chucked them onto one disk – very useful if you missed the demos first time round. The *Max Headroom* demo, contrary to what you might expect, doesn't include any w-w-w-witicisms from Max himself but instead has some digitised graphics accompanying sampled music. The *Just for Money* demo is a sample effort of the Paul Hardcastle song and features the voice of Bob Hoskins. Average stuff.

***STF* Rating – 70%**

■ **M-m-man, I th-th-thought the st-st-stammer had cl-cleared up, b-b-but obvio-o-ously the pr-pr-prospect of being d-d-digitised in this d-d-demo has induced p-p-painful flashback psy-psy-psy-psy-psy... problems. Extracts from *Max Headroom*...**



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C ADVENTURE CREATOR

Shareware – South West Software Library – Disk 1612

Creating adventure games is *almost* as much fun as playing them. This creator gets around the problems of speed by producing C source code – but you need a C compiler to play your creations (check out *Sozobon C*, available from good PD libraries). Objects, locations, actions and messages are referred to by name rather than by number, so understanding the C source code is much easier. Excellent but quite technical.

(C compiler required)

All STs **STF Rating – 84%**

TASS ADVENTURE CREATOR

Shareware – Goodmans PDL – Disk GD1165

Like the *C Adventure Creator*, this package requires a high degree of programming knowledge. Create adventure games using a high level language, then compile them straight to disk. Included is an example adventure game demonstrating the sophistication of the system, but it's really of use only if you're willing to give programming a bash.

All STs **STF Rating – 70%**

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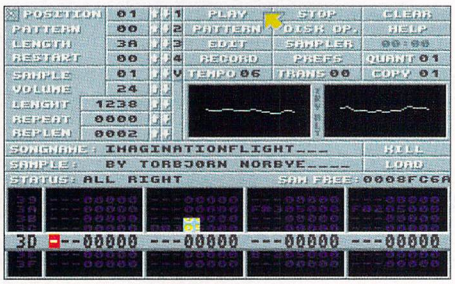
- Remember, if you're going to change anything at all on a disk that has valuable data on it, *make sure you work on a backup copy!*
- Don't forget to Change Current Disk if, for example, you're loading *DL 2* from a different drive to the one you're working on. Otherwise you can waste time looking at completely the wrong disk and maybe even ruining it.
- Under "Edit Entry" in the File menu there are a couple of file header parameters called "System" and "Archive" which need some explaining.

System files are supposed to be used only by the specific program they belong to and are hidden. As a result, they're treated as simple hidden files. The Archive option toggles the Archive bit (no, really). The Archive bit is reset – set to zero – when you first create a file and is also set when you change that file.

Any backup program is supposed to be able to tell which files have changed since the last backup by checking whether this bit is set and then resetting it when the file is eventually backed up. Unfortunately the bit only behaves consistently with TOS version 1.4, so on the whole it's best to ignore it.

- The "Unerase" option only works properly if you use it on a file that has just been deleted – that is, if you haven't subsequently saved anything else to the disk. If you accidentally erase a file and want it back, use Unerase *straight away.*
- It's usually best to leave the Auto-check option off, otherwise most of the time you're waiting around for the program to check the disk unnecessarily.
- The Check option isn't always entirely accurate, particularly when it says the directories are bad or the FATs aren't the same. If you can, always use another disk editor, such as *Knife ST* (£34.95 Hisoft ☎ 0525 718181), to check the disk before making any changes to it. Often you find there's nothing at all amiss. If in doubt, mistrust *DL 2* – it's good, but not perfect!

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East Midland PDL – Disk MAM23

ST FORMAT GOLD

This has eight tracker songs, complete with the *Empire Noisetracker* program with which to play and edit them. This nifty tracker enables you to edit songs in either step mode or in realtime, so it's easy to vent your musical talents. These are very high quality modules which sound superb when amplified through the old hi-fi. Best of the crop is *Image* which includes some groovy samples laid over a gnarly backing rhythm. Worth it for the *Empire Noisetracker* program alone. Crivens it's a corker.

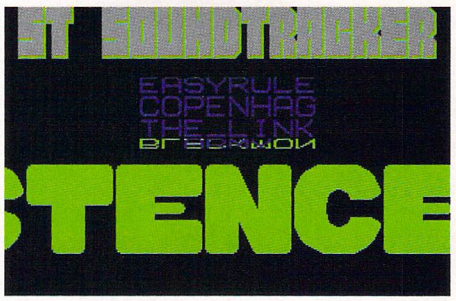
***STF* Rating – 90%**

SOUNDTRACKER MUSIC

Persistence of Vision – Disk TK2

Six tunes to tease the old lug-holes and annoy the neighbours (for full annoyance effect, plug the ST into your hi-fi). Titles include: *Copenhagen at Night* (infinitely better than Copenhagen by day – I mean, that awful teensy mermaid they claim is a tourist attraction), *Easy Ruling* (certainly not written by our Ed), *The Link* (well, Ed Ricketts is the missing link), *Army Beat* (the elevator music they play in hamburger bars) and *Black Monks* (followed by the *Sepia Nuns* I expect). Best of the crop is *The Link.*

***STF* Rating – 77%**



■ **Adopt a silly Nordic accent and toast your beer partner while singing, "wonderful, wonderful Copenhagen". Number 12 in an ongoing series of handy tourist hints from the office of anti-tourist relations (with a little help from *Soundtracker*)**

UTILITIES UTILITIES UTILITIES

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Floppyshop – Disk WRD21

If you use a PD word processor, then up till now you haven't been able to use a spell-checker. This disk seeks to rectify the problem by supplying an 80,000 word spell-checker. The package includes notes on how to incorporate it into your programs using *GFA Basic*. It should also be of use to existing dictionary users who might not spell everything the American way – okay, dude? Useful.

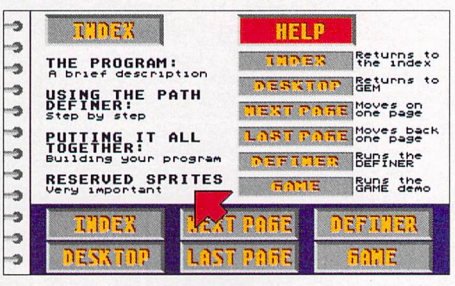
***STF* Rating – 74%**

STOS SHOOT-'EM-UP BUILDER KIT

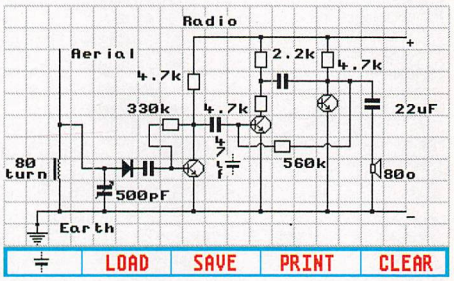
Shoestring Software – Disk ST112

The original shoot-'em-up construction kit was a commercial package which didn't do terribly well because it seems you punters would rather buy games than write them. Considering that *STOS* is designed to help you write games, a program written with *STOS* to help you write games is a bit odd. This is a well featured package, but don't expect *Xenon 2* quality. More *Pong* quality, really.

***STF* Rating – 71%**



■ **Trilobites from the Black Lagoon meet the Terylene Trashers from the tidal puddle under Weston-Super-Mare pier. Now you too can create ridiculous shoot-'em-up plots with *STOS Shoot-'em-up Builder Kit***



■ **"Well, it's obvious, innit? Your sub-meson doofus drive has crossed terminals with the planar metric compact surface mounting secondary line jack unit." Translation: the fuse has gone in your plug, mate**

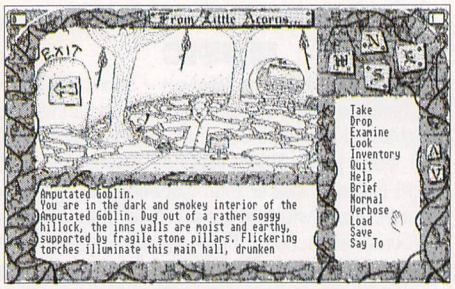
CIRCUIT DESIGNER

East Midlands PDL – Disk UTL189

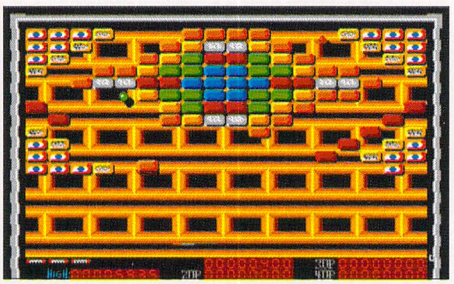
This program is designed specifically to "help design circuits for technology and physics projects at GCSE and A-level." As a result, it's been kept simple so it won't be of much used to Electronics engineers. Even so, you can knock up standard PCBs and then print them out. After all, clear diagrams are always useful for impressing the examiners. Simple and effective.

***STF* Rating – 72%**

GAMES GAMES GAMES **GAMES** GAMES GAMES GAMES



■ **Bilbo Baggins meets Threadbare the lonely Axminster carpet in *From Little Acorns*. Fantasy gameplayers, get your funky dodecahedron dice rolling 'cos there's a new sheriff in town and this time he's got more than a Troll-bashing spell at his disposal**



■ **Little known facts of *Master Breakout* (number 17 in a series): The joystick and mouse manufacturers of the world are in cahoots with the games houses to produce zappers that lower your patience threshold. It's true, guv', I sawed it on "Challenge Anneka"**

FROM LITTLE ACORNS

Budgie UK – Disk BU53

ST FORMAT GOLD

It seems that there are better quality games in the Public Domain than in the commercial games market and this wicked adventure from the prolific and highly rated Budgie group of programmers is no exception. The game combines an excellent plot with witty graphics, a nifty mouse interface and devious puzzles. Bored adventurers are going to thoroughly enjoy this diversion. Crude and lewd.

***STF* Rating – 90%**

MASTER BREAKOUT

LAPD – Disk B22

Serious feeling of *déja vu* this month. *Breakout* was the third arcade game ever to grace pool halls and bars. You know the score – wiggle a bat about at the bottom of the screen, knock tiles away, collect power-ups and zap the mouse over to the right hand side of your desk for a really tricky return (without spilling your cup of coffee). This is a colourful, tuneful version which is very demanding (that's review speak: demanding = likely to knacker joysticks and fray tempers). Teeth gritting stuff.

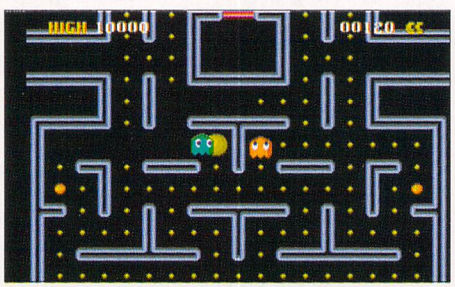
***STF* Rating – 84%**

PACMAN

Goodmans PDL – Disk GBU70

Cripes, this takes me back. If you remember playing the original arcade *Pacman* then you know it was one of the most mortifying games ever to glower from the corner of a seedy arcade. Here's a very competent conversion – the sprites are large, cheerful and faithful to the original. The screen moves up and down smoothly too, which means you've got a large play area to munch around. Sadists queue here.

***STF* Rating – 83%**



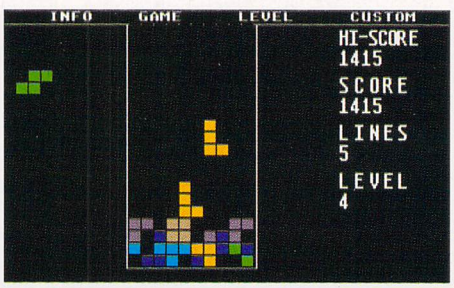
■ **No, not that! Anything but that! Just when you thought it was safe to ignore Pacland, back comes the little yellow one with the big gob in *Pacman* (and we're not talking about the Ed here...)**

TETRIS

East Midlands PDL – Disk GAME94

Funny shapes and infuriating logic strike again as *Tetris* gets the ST treatment in this latest conversion. This incarnation, however, is the Mac-like version which features non-stop action rather than a series of stop-and-go levels. *(FORMAT's* production people can tell you all about how adictive that can get – *if* you can distract them from the screen.) The game offers a wide variety of options, such as palette changes and defineable speed and difficulty levels. There are also some very natty touches: acid rain squares which erode the blocks, for instance. The game does suffer from occasional speed problems, but this doesn't affect the gameplay overly much. Swift.

***STF* Rating – 82%**



■ **Imagine: you're at the social event of the year and your dream girl walks up to you and says "hi," just as you place the L-shape in the wrong place. Her first thought: "What a hunk! And only a few blocks short"**

The *FORMAT* PD directory

■ Where to go for Public Domain software – demos, games and utilities for around £3 a disk (or even less)!
Note: if you write to any of these PD libraries for a catalogue, remember to enclose an SAE.
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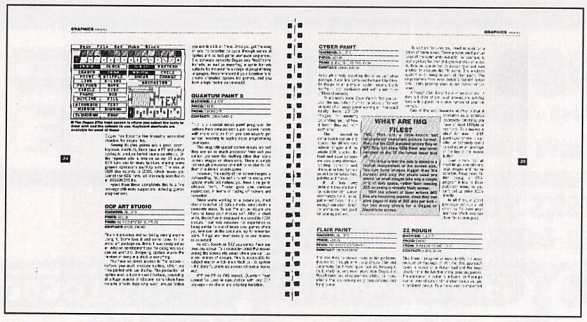
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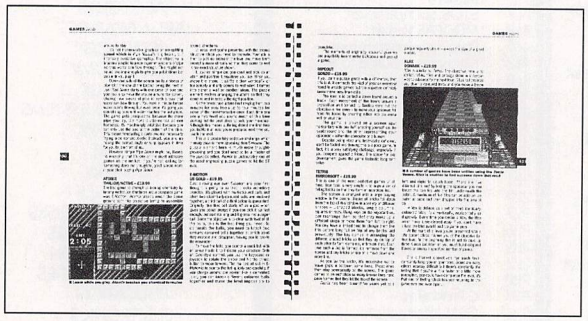
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Screenplay

"Look, Daddy! All those shiny new games just waiting for me to buy! Please can I have this one, Daddy?" "No you can't, young Mark. *ST FORMAT* haven't reviewed it yet, and we never buy games they haven't reviewed, do we?" Golly, what a sensible daddy he is!

FLAMES OF FREEDOM



No – it – it – can't be! You mean – it's here? It's *finished? You can actually buy it in the shops?* Well, rub me the wrong way with a stick of celery! (Swoons dead away)

page 56

R-TYPE 2

More blasting, dodging, shooting, dying, restarting, cursing, giving up, re-restarting, scrolling, fighting, shooting, dying and ending (in that order) in the follow-up to – er, that other game with *R-Type* in the title **page 74**

JEUX SANS FRONTIERES

These French chappies are getting too clever for their own good, what with *Operation Stealth, Cruise for a Corpse* and now programming team Delphine's own Top 20. Just remember Agincourt, Pierre! (Nothing like a healthy dose of xenophobia, eh?) **page 82**



F15 STRIKE EAGLE 2

"Nyaaaawwww phutta phutta phutta bang peooow boom!" "Eat lead death, you swine!" "Take that, Chartreuse Baron!" "Delta Fox Romeo Orange Cockroach, you're clear to land." The *FORMAT* Guide to Making Your Own Sound Effects starts right here **page 67**

HUNTER

Archipelagos are all the rage nowadays, aren't they? They pop up in every Tom, Dick and Harriet's game. *Hunter,* for instance, has a very nice set of islands, thank you very much **page 60**

ARMOUR-GEDDON

There have been many games with bad puns in their titles, but *Armour-Geddon* must rate as one of the worst. And, y'know, somehow, the most cutting thing of all is that it doesn't even make much sense **page 64**



SCRUTINISED THIS MONTH

ARMOUR GEDDON.....64
ATOMINO.....72
THE BALL GAME.....77
BILLIARDS 2 SIMULATOR.....77
CREEPY.....77
THE FAMOUS FIVE ON A TREASURE ISLAND.....80
F-15 STRIKE EAGLE 2.....66
FRENETIC.....70
THE GAMES SUMMER EDITION.79
HUNTER.....60
IMPOSSAMOLE.....77
LIFE & DEATH.....62
MAUPITI ISLAND.....69
MIDWINTER 2.....56
R-TYPE 2.....74
SHARKEY'S MOLL.....79
SNOTT.....80
SWITCHBLADE 2.....74

SCREENPLAY EXTRA.....77
GAMEBUSTERS.....85

ATOMINO

Remember the Acorn Atom? Ah, those were the days. About 2K of memory and all the charisma of a drunken trainspotter. But never mind – *Atomino's* got nothing whatever to do with that **page 72**



THE *STF* RATINGS SYSTEM

- **It is *ST FORMAT* policy to review only finished games – that is, the games you could actually buy in the shops – never incomplete or demo versions**
- **We review *all* games released, but *only* when they're finished. We will not be rushed into reviewing unfinished games to beat our "competitors"**

GRAPHICS: A score out of ten for the quality of graphics and animation, including how big and colourful the sprites are, how smooth the scrolling is, and so on.

SOUNDTRACK: (out of ten) Does the game make use of sampled sounds or rely on eardrum-twisting ST sound chip noises? Does it have quality tunes and spot sound effects?

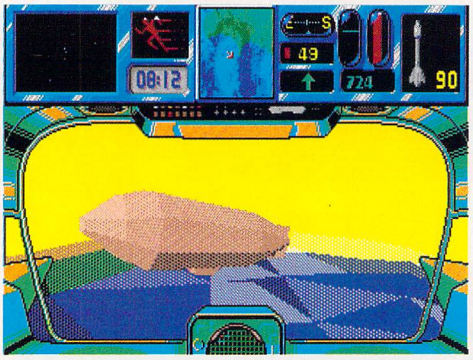
INTELLIGENCE: (out of ten) How clever do you need to be to tackle the game? Puzzle and strategy games should be tough; few shoot-'em-ups are mentally taxing

INSTANT APPEAL: (out of ten) You take the game out of the box and drop the disk(s) in the drive. How well does it draw you in? How easy is it to get into?

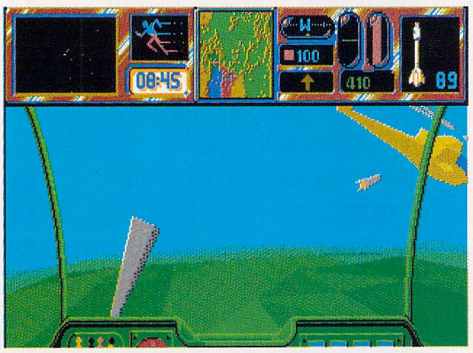
LONG TERM INTEREST: (out of ten) You've had the game for a couple of weeks. Is it covered in dust, in the bin or still in your drive? A crucial consideration, this.

OVERALL: (a percentage) Terrific graphics and wonderful sound make a game look hot but not great. The overall score depends on the quality of gameplay and long-term appeal.

Over 42 top games cracked on page 85 ● Level codes for *Lemmings* ● How to complete those *MiG-29* missions ● Codes to get you through the *Mean Streets*



■ Here, look, the people in the back seat of that zepplin haven't got their seat-belts on. Ultimate sanctions required at this juncture, after all HQ didn't say anything about introducing yourself to the hun. A bevy of missiles up their rear propellor should soon convince them that justice *will* prevail



■ Aha, another rear seat-belt evader. Oh dear, it gets worse and worse, the old lady in the back is reading a feature in *Hello* about Prince Spanner of Leamington Spa and his pipe collection. Time for a sharp entrance. Missiles to ready... Fire!



■ The option's there to build up a whole army of operatives each with completely different kinds of social and physical skills. Here, agent Tanya Oglemebod has been gently woken up from deep sleep. But how does she shape up?

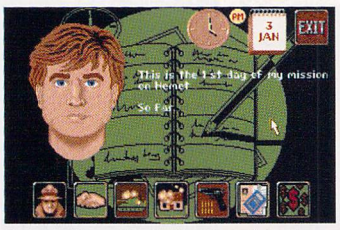
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Midwinter 2: Flames of freedom

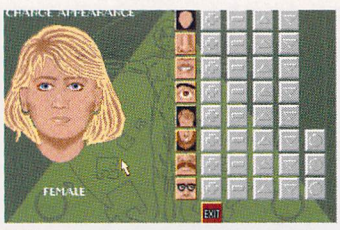
ST FORMAT GOLD



You know the feeling. You wake up on a rainy Monday morning only to find that a vicious slave trading empire has set its sights on your post-nuclear-winter island. Andy Hutchinson resignedly pulls on his latex hot-pants, dons his flying goggles and sets a course for Agora, an island where the Flames of Freedom still flicker...

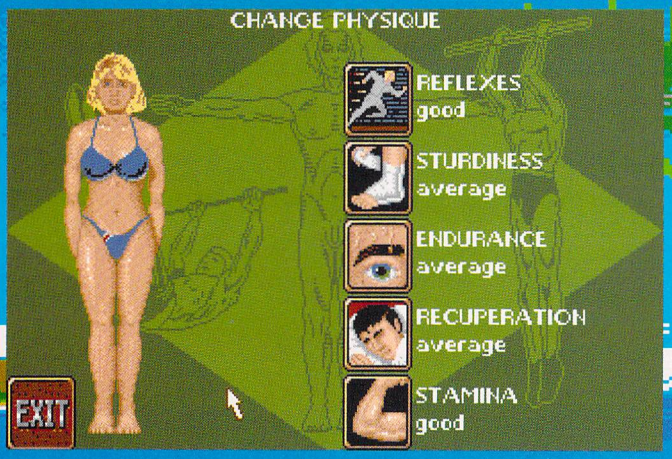


■ Dear Diary, this is the first day of my mission and nothing much has happened. My thing, however, is now 27.5 cms long and I've found some very peculiar pink and yellow coloured gunge in my belly button. PS I think the dog's got a bad dose of worms



■ If you don't fancy using the game's built-in field operative, Meestair Steel, you can knock up your own creation. Here secret agent Tanya is taking shape. Now what about a beard, an eyepatch and a limp in both legs for that authentic super-spy touch

SECRET AGENT MANUFACTURING PLANT...



■ Excellent, excellent. She'll need all of these abilities to survive in the field. Reflexes, sturdiness, endurance, recuperation and strength. Just some of the qualities *you'll* need after staying up 24 hours playing this game



■ Then when you're bleary-eyed and knackered in the morning you need a couple of these qualities to explain to your boss/partner/parent exactly why those bags under your eyes look like Fisons Gro-bags

It's now been 18 months since we reviewed the trail blazing world-game *Midwinter*. The boys who produced that 94% rated game have been busy as bluebottles on a really fresh cow-pat, working on the sequel, *Flames of Freedom*.

The game's storyline (and for once this is significant) takes up (shock, horror) where *Midwinter* ended. John Stark has saved the isle of Midwinter from domination by the Shining Hollow army, but now the island is sinking once more beneath the sea. The remaining inhabitants of Midwinter therefore join forces with the inhabitants of Agora and form the Federation.

The Saharan Empire controls 41 of the 42 islands which spread west from the African mainland. Agora is the only island they haven't touched, but they've now got their sights set on total domination and Captain John Stark is mobilising all the agents in the Federation in a bid to stop those thoroughly rough sorts turning Agora into so much silage.

Midwinter 2 can be played in any number of ways, although there are three main options to choose from: fire-fight, campaign or raid. The "fire-fight" option drops you into the thick of the action with the sole purpose of blasting everything in sight. You start off in a flying-sub, but you can hijack further vehicles when yours wears out.

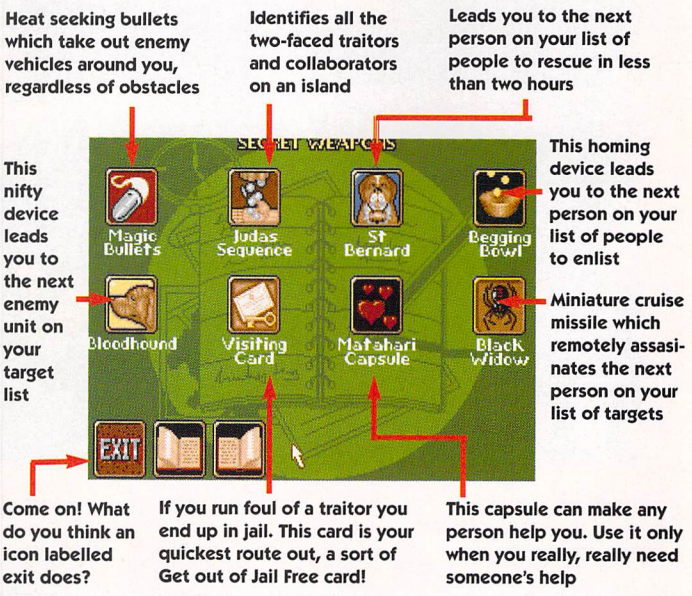
The "raid" option enables you to pick off single islands. Each island offers completely different challenges and objectives and they are thus mini-games in themselves. An average sized island takes at least a day to complete but if you choose this option they have no effect on the Saharan empire – they're simply a shorter game option.

"Each island offers completely different challenges and takes at least a day to complete – a mini-game in itself"

The "campaign" option enables you to play a long, strategy-intensive game, which can easily take you several months to complete. Here, you have to make sure you choose islands because of their strategic importance rather than the level of fun you can have on them. Each island is rated from one to five skulls, with five being the hardest.

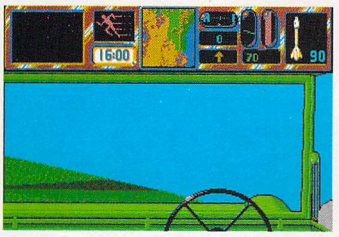
The tricky islands aren't necessarily the ones with the highest levels of enemy firepower; they're often the ones with the most stub- ➤

SUPER-WHIZZO SECRET WEAPONS

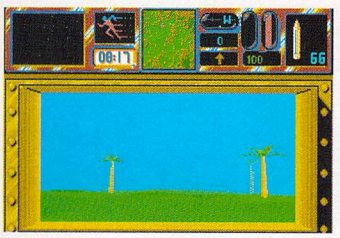




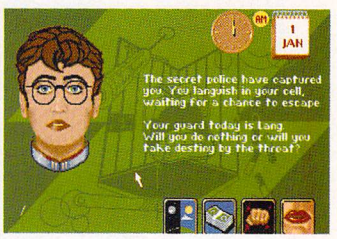
■ Operations central, the old HQ, the place where you decide which island you'd like to raid (as in destroy), the personnel you'd like to send there and the amount of forward planning you want to bestow on the poor spys



■ I was cruising down the road, tryin' to loosen my load, I've got seven women on my mind. One a she's a contact, two a they're a dead loss, and four are no friends of mine. At least you've got 90 missiles at your disposal



■ I don't know, here I am in an impregnable tank with 66 missiles in the armoury and what have I got to shoot at? Two lousy palm trees, that's what. Ah well, David Bellamy isn't around, time for a spot of target practice



■ All right Brenda, you've got the loofah, the ochre bidet, the camomile tea bag and the laughing leprechaun toy. So are you going to hang on to all these luverly prizes, orrrrrr, wait, bribe, punch or seduce?



■ Before you go gallivanting off into a mission, it's wise to familiarise yourself with the equipment you'll be using in the field. From this training screen you can train in any of the vehicles, participate in a fire-fight or work out the strategic importance of certain islands



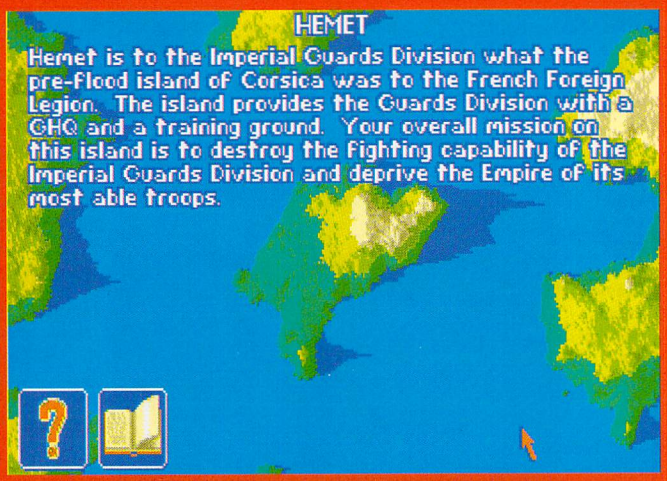
■ "Glad you could drop by, Tanya. Just to let you know that the flame throwing omelette with meat and mushroom topping you ordered won't be ready for this mission. Sorry, you'll have to make do with the standard deadly licking leeches. Top hole, carry on"

born islanders. The islands are populated by citizens, soldiers, resistance fighters and workers. All of these have different personalities, so they may or may not help you. In fact, some who offer their help may turn around and betray you. On several islands, resistance fighters can shop you to the local constabulary.

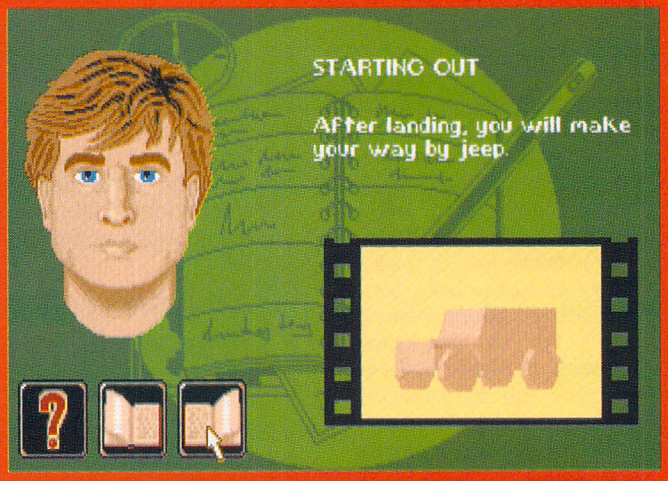
You *definitely* need the help of the islanders. They can blow up enemy convoys for you, provide shelter, transport or guns or take you on a trip to meet another person. If they appear a little unwilling to help, you can bring them around to your way of thinking by using your personal characteristics – such as sex appeal, "justice" or strength – to convince them that the Federation is a force for good old-fashioned democracy.

There are 22 different modes of transport, although you can't find all 22 on every island. At the start of a particular island mission, you're kitted out with a vehicle, it may be a nifty flying-sub or a groovy helicopter. Often these have to be discarded – possibly because you've

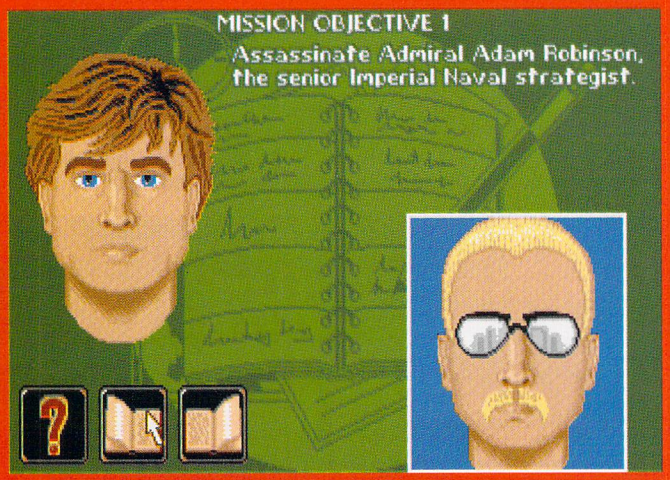
OH TO BE ON A DEATH-DEALING MISSION, ERMM.. IN THE SUMMERTIME



■ Each island has a completely different set of objectives and problems to overcome. Hemet is the island that I myself designed. The overall objective is to knock out the imperial guard. Beware, though, they're tough geezers



■ At the start of each mission, you're thoughtfully provided with a doody vehicle to whiz you about the island and terrorise the locals with. In this case a jeep they had left over from M*A*S*H has been requisitioned



■ The man who runs the whole show is Adam Robinson, a dirty dog whose sadism knows no bounds. Yes, this is the man responsible for Credo, Highway *and* Stars on Sunday. He obviously needs assassinating right now



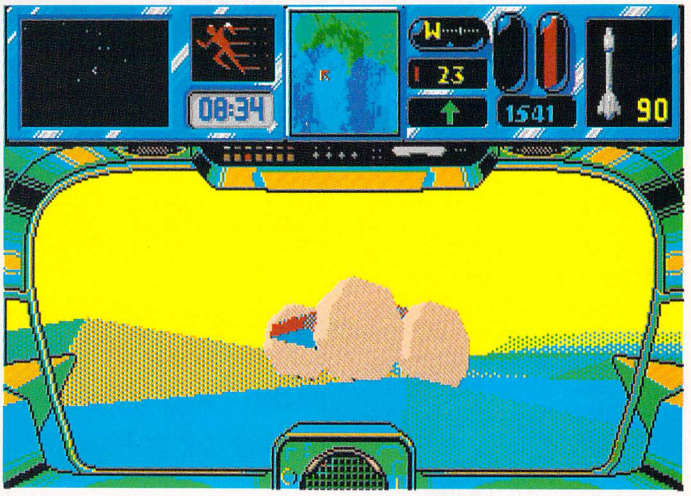
■ Can't make things too easy though, can I. All you've got to protect yourself with at the start of the mission is this teensy pistol and 25 bullets. Search around a bit longer, however, and you find some tasty fire-power

run out of ammo, but more often because you've just been blown up.

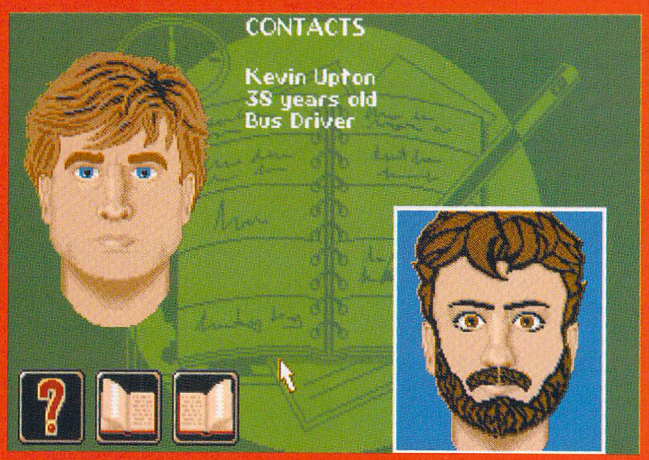
If you get close enough to another vehicle, a special action window appears. Hit F1 and you can hijack the vehicle. Each type handles completely differently – balloons cannot be steered, just raised or lowered; mini-subs are quick and manoeuvrable but don't offer much protection; trains have to stay on rails; flying-subs can go anywhere.

To get around, you need to make extensive use of the map screen. This fractal image details all the settlements, people, roads and craft you've encountered or were informed of at the beginning of the mission. Locations can be travelled to via an autoroute function which cuts out the cross-country travelling.

"Definitely a classic, with something for every brand of game-player from strategist to shootster. You'll be playing it five years from now, not just weeks after you've bought it"



■ The flying submarine dives under the waves, only to find that a convoy of Parcel Force vans is hogging the whole of the submarine highway. Ah me



■ Yeah, all right, so he's a bus driver. But look, if you're going to pick an undercover occupation for a resistance fighter, what better job could you choose? Contacts can supply you with all sorts of help. Kevin here will probably lend you his turbo-nutter super-bus (so treat it gently)



■ Welcome to beautiful Hemet, an island where you're absolutely assured of having no rest, food or sessions down the pub. You can however yomp across country, picking off zepplins and trucks, while searching for your only contact – you know, Kevin the bus driver. That's him in the middle of the map with his legs spread



■ Decisions, decisions. Will you take up the devious, tricky and downright piggish challenge which *ST FORMAT* has created for you on the teensy island of Hemet? Well come on, I certainly didn't find it a problem!

EFFECTS

Storming. *Midwinter 2* firmly establishes itself at the forefront of graphic effects. Mike Singleton and his team have stuffed over a million square miles of 3D world into the game, all of it generated by light-sourced fractals.

The scenes at sea are particularly impressive. If you're in a boat, for instance, you bob about in real-time. If you surface in a sub, the waves lap up and down in front of the periscope.

You can go anywhere and look at everything in the game-world. The

"You can go anywhere and look at everything in the game-world. Nothing is superfluous; it's all there for a reason"

enemy craft zip around with tremendous realism, right down to the fact that they turn their lights on when it gets dark (a scene which itself is accompanied by a slow change from dusk to nightfall).

Each section has its own detailed graphic and special icons which add to the professional feel of the game. Nothing is superfluous; it's all in there for a reason.

Sound, however, is very standard. Theme tunes play depending upon which section of the game you're currently playing – for instance, when you're using autoroute a speeded up main theme plays. Other effects are chip creations which squelch when you fire and crackle when you hit something.

VERDICT

Scew, what a porcher. *Midwinter 2* is definitely a classic. There's so much depth in the game that you'll

"Midwinter 2 has over a million square miles of 3D world"

still be playing it five years from now, not just weeks after you've bought it.

Every brand of game-player can find fun in the game. Strategists will love the campaign game, shootsters will love the fire-fight sections; adventure players will enjoy the character interaction; everyone will love the gameplay and the graphics.

The one flaw to the game is the intensive amount of disk accessing which takes place. Every time a map is loaded, a bounty won, a new section of an island entered, or a new vehicle hijacked, there's a long pause while the data is loaded from disk. This can get frustrating at times, especially when you're right in the middle of a massive battle and you've hardly got time to think.

However, even with all the disk accessing, *Midwinter 2* offers a brilliant challenge to anyone who thinks that games begin and end with licences. There's squillions of objectives to achieve and jillions of enemy forces which need neutralising. One day all games will be made this way.

ANDY HUTCHINSON

GRAPHICS	9
SOUNDTRACK	8
INTELLIGENCE	9
INSTANT APPEAL	9
LONG TERM INTEREST	9
OVERALL	**92%**

ACTIVISION £24.99

Hunter

Take a pinch of heroism, add a dash of courage, throw in some stealth and what do you have? It's either a nasty stain that can only be removed with Fairy Liquid and warm water or a *Hunter*. Ed Ricketts opts for the former...

It's dark. You've got four hours of your mission left, you still haven't found the General and your lumbago is playing up again. Do you give up and go back home for tea and toast, or act like a real *Hunter*, rip off all your clothes, smear your body in mud and run bellowing into the night?

The plot of Activision's newie might sound vaguely familiar to anyone who's played *Carrier Command*. As the *Hunter* (no names, no bag of crisps) it's your job to single-handedly sabotage the enemy's installations scattered around an archipelago of islands. These islands are full of buildings, vehicles, enemy soldiers, defences and seagulls.

There are three different sorts of game you can tackle, depending on your strategic leaning. The "Missions" section gives you many different separate missions to carry out within a specified time. You might have to destroy three fuel dumps by 1300 hours, for instance, before returning to HQ for the next mission.

The "Hunter" section gives you one main objective to be carried out, but there are many different smaller tasks involved in achieving that goal, such as finding medicine to heal a wounded prisoner who then tells you the location of the General, and so on. Finally, "War" plunges you into the thick of things by giving you many timed objectives – including the destruction of the enemy HQ – with the full might of the opposition against you.

There's plenty of kit around to help you, if you can find it. Items like sub-machine guns, flares, a map and timed explosives are vital for your mission, and with an inventory capacity of 30 items you've more than enough space.



■ *Hunter* puts you back into that familiar role – a hardened mercenary out to take on the enemy with just a severe haircut and some sturdy boots



■ The stores are marked on the map for you. Here you can find a very impressive array of hardware, and this is the only place you can get some of the equipment. Click on the small question marks on the strip at the bottom of the display for a brief description of the item selected

EFFECTS

The 3D view you get of the islands is excellent. The hills, buildings and vehicles are all portrayed with fairly simplistic shapes, as is normal with 3D games, but the smoothness with which they move is exceptional. In addition, when you enter a vehicle the "camera" zooms out slightly, giving you a real impression of depth as you buzz about behind the buildings.

There are lots of nice little touches too: seagulls swoop overhead (you can shoot them too); rabbits scamper about and run away if you try to catch them; and occasionally even fish jump onto dry land. Go to the edge of the map area in the landscape and what do you find? A huge white line enclosing everything, just as it

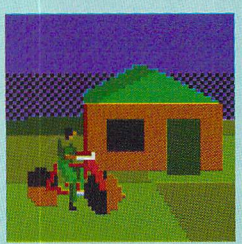


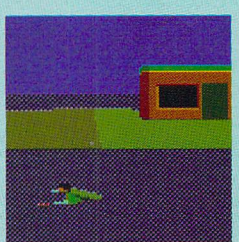
HAVE YOU GOT IT IN A DIFFERENT COLOUR?



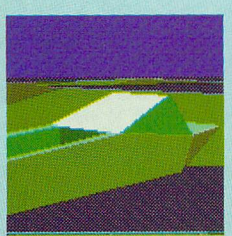
■ The helicopter is your quickest way of getting just about anywhere, but it's also the trickiest of vehicles to control. Taking off on a slope isn't recommended – dip the nose forward to lift off and you may just crash into the ground. Result? A surprised *Hunter* minus one very useful chopper

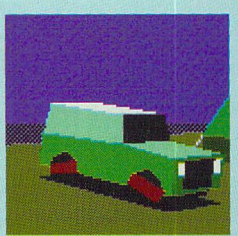
There are many different ways to get about in *Hunter* – anything from good old-fashioned Shank's Mare through sailboards and bicycles to choppers. Naturally the faster vehicles are your best bet if you're thinking of visiting any enemy territory – if you're really clever you can even outrun the enemy missiles with some natty manoeuvring





■ The simplest way to get between islands is just to swim. But this has several nasty disadvantages – even Duncan Goodhew couldn't outswim a missile, and you get tired very quickly. Indeed, attempting to swim when you're completely knackered can easily do you in



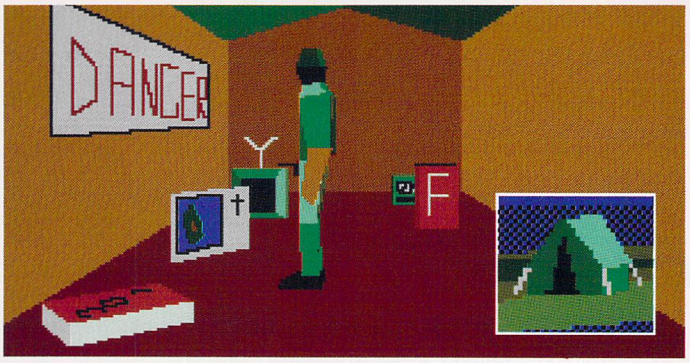


■ These boats are probably the commonest sort of vehicle, being liberally scattered round the islands, and very nippy they are too – plus they come with a handy gun attachment. The jeeps are useful on land, but strangely enough aren't much cop in the water

■ You might not expect the bicycle to be very nippy, but actually you can whip about quite smartish. Plus there's the added attraction of not needing to refuel it every ten minutes



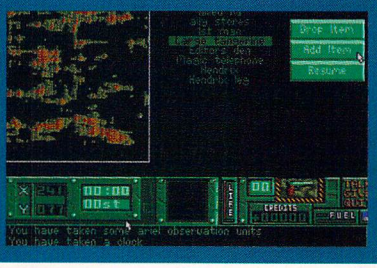
■ Although the small sailboard is a pretty bizarre (and somewhat nancy) way for a macho *Hunter* to get about, it's not the weirdest. There's a rowing boat for the taking, which has roughly the same advantages as the bicycle but tends to tire you out more



■ There are many buildings about in *Hunter*. Some look mightily impressive from the outside and yet hold nothing at all, while other seemingly innocuous peasant huts can hold some strange and wonderful things. For instance, where would you expect to find a hungry Green Monk? In a tree stump, of course

GET COORDINATED!

Hunter is one of those games that uses map coordinates to tell you the whereabouts of important locations. This usually means scribbling the numbers down on a bit of paper, which you then lose and find two weeks later after it's been washed twice because you left it in your shirt. Not any more, luckily, because *Hunter* has an obvious but effective solution.



■ When you want to mark a location, go to the Log Book which you usually find very near your starting position. Click on Add Item, type in the label of the item and its X and Y coords. Then whenever you click on that label, that point is highlighted on the map. Why didn't I think of that?

appears on the plan map. It's touches like this that make the game a joy to play.

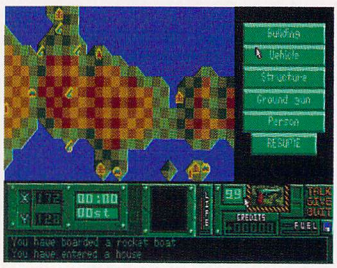
The only disappointing effects are the *Hunter's* movements – when he walks it looks as though his arms have been nailed to his body – and the explosions, which look like huge flowers. Audio effects are sound chip only, and are restricted to spot effects such as seagull cries, the swish of the sea and explosions, but on the whole they're very effective.

VERDICT

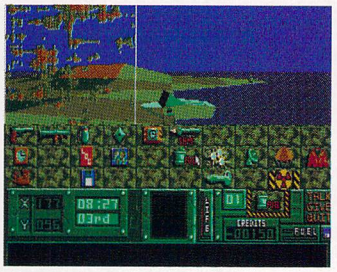
Hunter is really very enjoyable to play. You can have enormous fun just wandering around, searching the buildings and zooming about in jeeps and the like, but when you want to get serious you find some hefty challenges awaiting. Luckily there's a save game option that can be accessed at any time, and you're often going to need it.

There's a real atmosphere to the game too – it's possible to get genuinely tense when you're gingerly traversing a minefield in the middle of the night with just the sighing of the sea in the background. There's a marvellous feeling of freedom, of being able to do almost anything you like – such as jumping out of vehicles before stopping them and watching them go whizzing off into the distance. Overall, *Hunter* offers everything you could want from a game: huge amounts of gameplay, fantastic graphics and those insignificant but pleasing details that give games a real polished look. You don't need to be a hunter to know that this is a real find.

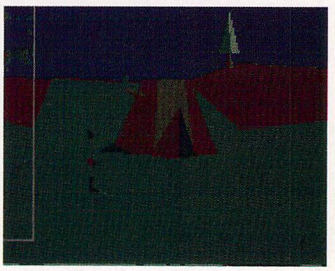
ED RICKETTS



■ If you need an overall view of the island you're on, send up an aerial observation unit. This gives you the locations of everything of interest in the vicinity. Be warned, however – you only have a limited number of these and although more may be found, you'd be wise to use them sparingly



■ Move the cursor into the playing area to reveal your inventory. As you can see you're quite a sturdy bloke because carrying 30 separate items at once – including a sub-machine gun, a whacking great portable Surface-to-Air missile launcher and a nuclear device – seems to be no problem at all



■ When it gets dark it's a real job to make out anything – even the control panel – so use those flares you found

GRAPHICS	8
SOUNDTRACK	7
INTELLIGENCE	8
INSTANT APPEAL	9
LONG TERM INTEREST	8
OVERALL	**92%**



■ Encounter an enemy and he does more than just doff his cap and ask how the wife is. Unless you've found (and are wearing) the red uniform of the enemy guards he spots you a mile off and comes running (except he doesn't actually run) with his bayonet fixed and hatred in his eyes. Run away!

Life &

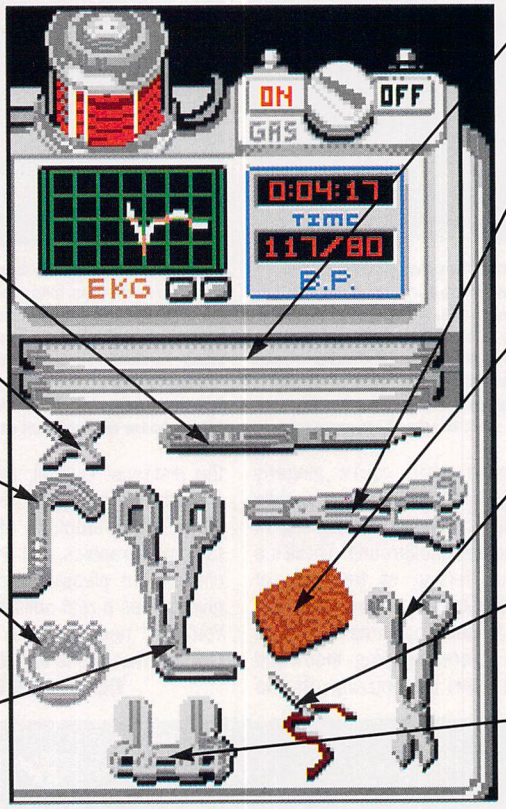
MINDSCAPE £29.99

Of all the daft simulators attempted by enterprising software houses over the years, a medical sim must be one of the silliest. Seven years of training? Who needs it! Play *Life & Death* and you'll believe major surgery is simply a matter of prodding a few people and yanking their bits out.

Yes indeed, it's your chance to become a junior doctor at Toolworks General, a hospital specialising in – get this! – abdominal complaints. You're presented with a series of patients complaining of various but consistent symptoms, usually things like "abdominal pain," "dizziness" and other helpful descriptions. After an examination – abdominal area only – it's your decision what should happen to them. You have a choice between keeping them in for observation, giving them a dose of medication, x-raying them,

SCALPEL PLEASE, NURSE

Each tool has a specific purpose and a very specific time at which you must use it. If you're lucky and you've got a helpful doctor on your team during an op, you're told if you start to use the wrong instrument. But don't do it too often, because the patient won't stand up to it. Actually, he'll lie down – permanently.



Scalpel – the all-important slasher. This has a wide variety of uses, like cutting, slashing and incising

Skin clips – use these to close up the skin when you finally complete an operation successfully

Suction tool – use this to remove all the nasty-smelling icky fluid that probably isn't at all necessary and just gets in the way

Cauteriser – use on clamped bleeders to seal the wound. (And you thought a clamped bleeder was a car that's stuck in a space where you want to park, as in "That clamped bleeder!")

Large clamps – you use these to hold major bits like the appendix out of the way so you have a clear view of what you're destroying – er, I mean repairing

Drawers – pull them out to reveal a whole variety of time-wasting stuff you have to use, like antiseptic and injections

Scissors – these are used for more delicate incisions than the scalpel – when you can't afford to damage the delicate organs underneath the layer you're on

Swab – wipes blood off skin. Not strictly necessary, but helps to make the undertaker's job that little bit easier

Clamps – you must use these smaller ones to hold the patient's bleeding wounds closed until you can cauterise them

Sutures – used to tie things like arteries off, and to stitch layers together at the end of the operation... if there's anything left

Retractors – use these to pull the layers of skin apart after you've made an incision, and close them up when you're lucky enough to have a live one after the op

AT TOOLWORKS GENERAL, IT'S

Life in Toolworks General is pretty orderly, following a predictable round of examinations, lessons and the very occasional dead person. Here's a glimpse of what generally happens, from arriving at the hospital still wet behind the ears to becoming a cynical old slasher who's done in more people than Hannibal Lecter could even dream of



■ Right at the beginning of the game, in the implausibly-deserted reception area, you're asked by the permanently-grinning receptionist for your name. It's probably best to use a pseudonym at this early stage – that way it won't actually be you who's struck off

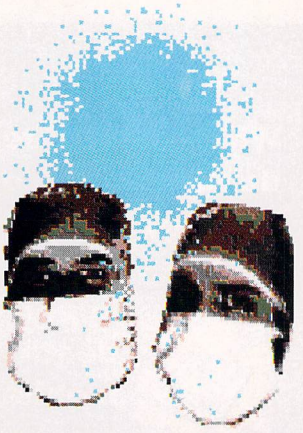


■ Before you can start hacking you need a few basic lessons, mainly on how to avoid lawsuits, the best way to silence screaming patients... that sort of thing. When you've skipped – sorry, inwardly digested – all the information, you're let loose on the patients



■ And here's the poor sod who's destined to be your first case. He's complaining of stomach pains and general dizziness. Definitely sounds like he should be opened up to me. Still, best go through the proper channels and have a quick look at 'im

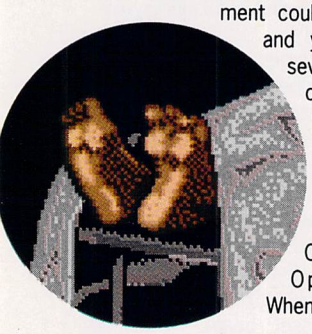
death



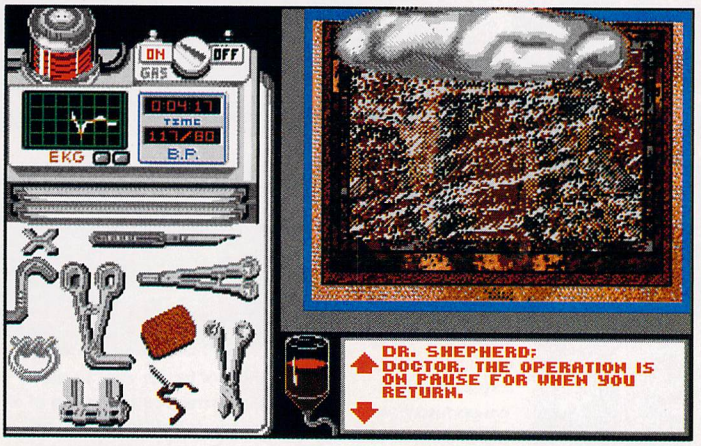
"The realism is almost gruesome, and you hear the digitised 'Oohs' and 'Aaghs' of the patients"

giving them an ultra-scan, operating or referring them to a specialist.

At first it's difficult to know precisely when to do what, but as you get used to the patients' reactions to your examination it becomes more or less second nature. Giving the wrong diagnosis means treatment could be fatal and you get a severe ticking off from your superior. But that's all. You can still get to Carry On Operating. When an operation does become necessary you need to follow the procedure precisely – the manual is a must here – and use the right injections sharpish if, for instance, the patient starts to suffer from fibrillation (or muscle spasms) during the operation.



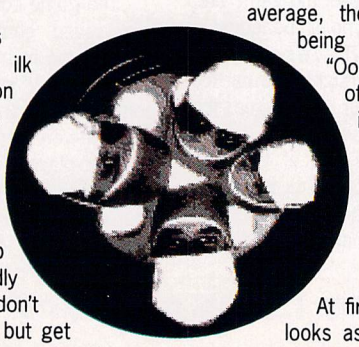
■ **Your last attempt at abdominal surgery. The worrying thing is that you can't remember where you left that pair of surgical scissors. Never mind, you've still got your nice white coat...**



■ ***Life & Death*** **gives you the opportunity you've always dreamed of – the chance to dig about in someone's innards and not give a damn about the outcome. But remember, don't try this at home. It's somewhat illegal and a bit messy...**

EFFECTS

A game of this ilk stands or falls on the nature of the graphics during the actual operation, and in this respect *Life & Death* doesn't do badly. Admittedly the early stages don't look too realistic, but get to the appendix or aorta itself and the graphics really come into their own – the realism is almost gruesome. Elsewhere the graphics are clear and attractive, if not particularly well drawn. Sound is decidedly average, the only highlights being the digitised "Oohs" and "Aarghs" of the patients during examination and The Big Machine That Goes Bleep in the operations.



VERDICT

At first, *Life & Death* looks as though it could be great fun simply because it's so different. But as you get used to the symptoms and treatments you realise there's actually very little to the game and it consists solely of the "examine, treat, call for next patient" chain. Things do become a little more involved with operations, because until you know exactly where to cut and what to do they're very difficult, but once you've sussed them they, too, rapidly slide into just a dull routine.

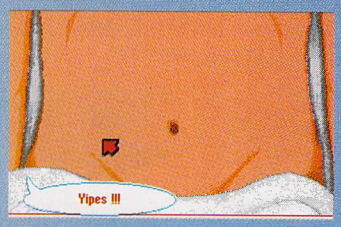
For a game that's been so long arriving (it actually first appeared on other micros in 1988) there's precious little in it to surprise you. It comes with loads of impressive-sounding medical bumpf and even a pair of rubber gloves, presumably to try and justify the £30 price tag, but it doesn't do the trick.

Life & Death is fun to play for a few hours but the crucial ingredient, long-term playability, is sadly missing – interest palls after you've worked out the mechanics of the game. This is a real pity, because with a bit more to do this could have been a classic game.

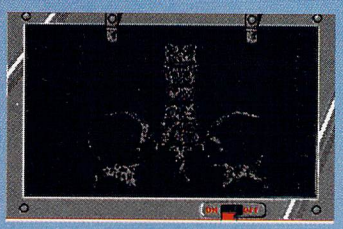
ED RICKETTS

GRAPHICS	8
SOUNDTRACK	6
INTELLIGENCE	7
INSTANT APPEAL	8
LONG TERM INTEREST	4
OVERALL	**72%**

KILL OR CURE, BUT MAINLY KILL



■ **Click around the abdomen and see where he squeals. You soon get to know the tell-tale signs of appendicitis or an aneurysm. He seems to be in pain on his lower left side, so let's stick him under the X-ray machine and take a look**



■ **And what shows up? Er – nothing at all. That sort of pain can be caused by kidney stones, which would mean a boring referral, but since there's nothing awry on the scope it can only mean one thing. Time to cut! Get your gloves on...**



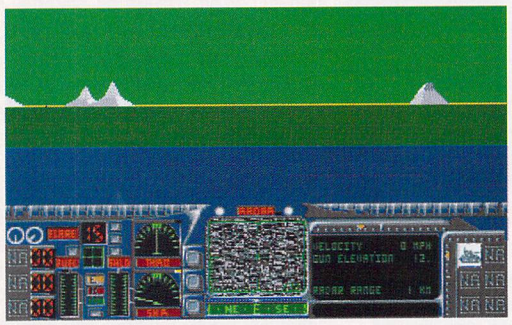
■ **Operations are simple once you know where to slice. Opening the early layers is easy, as long as you keep an eye on the patient's heart, but once you start rummaging about in the appendix every cut counts. All it needs is one false swipe and...**



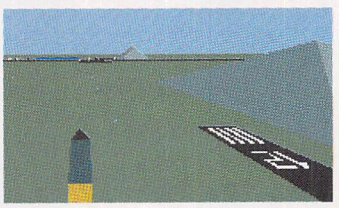
He's a gonner. Oh well, never mind. As the Chief Surgeon says, "Surgery is not easy, so keep trying." What a remarkably liberal policy they have in this hospital – good insurance cover and plenty of real live specimens for the trainees to practise on

Armour

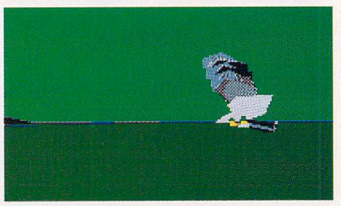
When there's death dealing action on the cards and it involves hi-tech super-death mobiles, there's only one man for the job: Andy Hutchinson – mercenary, plankton specialist and devil's tool



■ The radar's out, the fuel situation isn't very healthy, the jammers are gone and I forget me Dairy Lea Cheese slices. I knew I was being optimistic tackling a strategy shoot-'em-up future war vehicle simulator without a net...



■ I can think of better ways to die. Here you are strapped to the top of an ICBM 15 seconds before impact and not even wearing clean underwear



■ Ooops. Only 30 miles on the clock too. My dad's going to kill me – that is if the wreckage weren't just about to do a much better job for him anyway

Dear, dear me. If you can believe all these sooth-saying games designers, the future isn't going to be a very nice place to live. According to the crystal ball gazers down at Psygnosis there's going to be a nuclear war in which the vast majority of us are bound to die – but hey, anybody could have predicted that one.

However, things get worse. All the politicians and rich people who sat out the nuclear winter in their sterile little environments have no intention of letting the little people on the outside share in a bit of warmth and synthetic food. So, as you might expect, the little people build a laser cannon.

Your mission in all this? Well, see, you work for the fat cats and must find five pieces to a neutron bomb scattered throughout the nuclear landscape before the little people unleash a large beam of light on your prefabricated hide-out. Only problem with this of course is that in real life we're all far more likely to be the outsiders yearning for a bit of shelter. Still, on with the game.

Armour Geddon is very much like a futuristic *Carrier Command*. You control the headquarters of the Sheltered Ones – you know, the rich people. At your command are four departments: Research and development, Intelligence, Equipment and the Stores.

The R&D department enables you to develop and build weapons and vehicles for use in the field. A set number of scientists and engineers can be placed on certain projects, so for instance you've always got a steady supply of rockets and fighters (the two most useful items in the arsenal).

The intelligence section enables you to view a map of the game area and set up waypoint beacons to guide vehicles. This way you can drive a vehicle straight to a particular location without second-guessing from the landscape.

Equipment is one of the most often used sections of HQ. Here vehicles are kitted out with the appropriate technology and then shoved into the lift to be piloted about the landscape. The stores screen in simply a record of what is available for use in the field.

The game comes complete with four saved game positions. This enables you to play the game after the discovery of sections of the bomb. Alternatively you can play from the very beginning, train or set up a two-player modem game.

Up to six vehicles can be under your control at any one time. These are: light tank, heavy tank, hovercraft, helicopter, stealth fighter and stealth bomber. Most useful vehicles are the hovercraft and the stealth fighter because they are both fast, manoeuvrable craft.

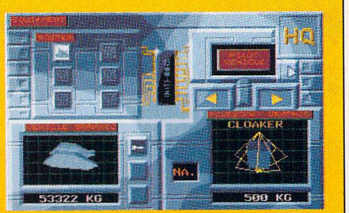
Six different kinds of weapon are also available: shells (primarily for the tanks), free-fall bombs (primarily for the bomber), "retarded bomb," rockets, missiles and an all-purpose laser beam. Additionally, beacons, night-sights, flares, drop tanks, cloaking devices, telepods and fuelpods are also available,

THIS IS HEADQUARTERS. BIG, ISN'T IT?

When you're not out and about blowing up enemy convoys and locating bits of the neutron bomb, you've got to manage production back at HQ. Intelligence, R&D, Equipment, Stores and the map mean that it's easy to keep tabs on every aspect of the game. Forward planning is the name of the game; forget to produce enough missiles and you'll probably regret it in the field



■ This grid map rotates, displaying all friendly and enemy activity. That large red airplane is very hostile, so it might be a good time to send up one of your own fighters to do him over



■ The equipment section of headquarters enables you to kit out the craft you've developed. Here your heavy tank is just about to get a shiny new cloaking device



■ The intelligence section serves two purposes. It enables you to monitor your own craft and set up waypoints to aid them in navigating to the correct destination

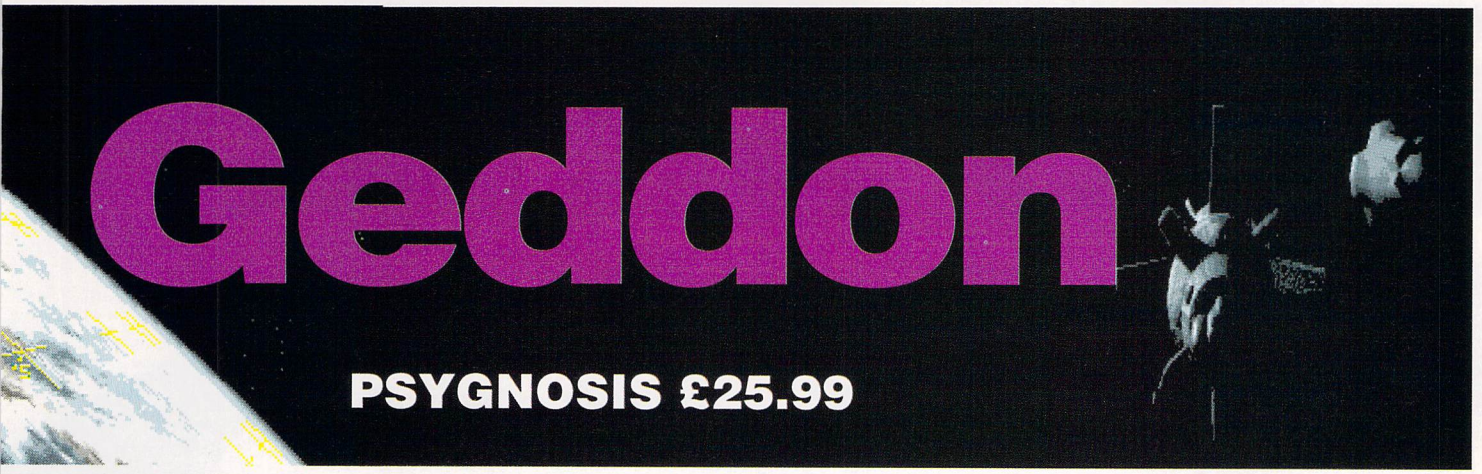


■ If you find you're running low on equipment, simply bung a few crusty old engineers on the case and within a few hours you have an impressive arsenal at your disposal, no problem



■ All the stores section does is provide technical information on all the mega-doody, aggressive and downright lethal weaponry at your disposal. Isn't that enough?

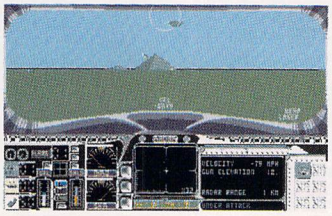
Geddon



PSYGNOSIS £25.99

depending upon the nature of a particular mission.

Each vehicle emerges from the HQ's lift and is then under your control. If you're in an aircraft then you need to taxi to a runway for takeoff; other vehicles can just yomp across country. None of these vehicles is easy to pilot – they all need considerable practice before you're proficient at picking off the enemy.



■ **Old Cantonese proverb say: "Never attack a hovercraft in a helicopter or you might find an IR guided missile up your exhaust pipe, mate"**

In combat, the best weapon to have is a missile. This automatically tracks possible targets; keep them in sight for long enough and the missile locks on ready for firing. A successful hit is accompanied by the plane or vehicle blowing up with suitable plumes of smoke.

The enemy's progress can be closely watched from the main 3D map in HQ. Here you can monitor the progress and condition of all of your craft as well as any possible threat from the enemy. In addition, reports on whether or not these craft are being fired upon appear in a messages window.

EFFECTS

Psygnosis have a reputation for producing graphically superior games; *Armour-Geddon* is no exception. As usual a cinematic opening sequence portrays a portion of the plot of the game, and then you drop into an excellent title screen.

The game-world scrolls about smoothly, even if it is a rather simplistic one. Each vehicle can be viewed from outside at any viewpoint or angle – even from a tower or satellite.

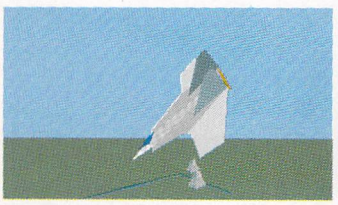
The aircraft are realistic filled vector graphics which move pretty smoothly. The head-up display of each craft is attractive, if crowded. Because of the wealth of information you need to be aware of at any one time, it can become a bit confusing seeing (for instance) exactly how much fuel you've got.

The headquarters screens where your army of vehicles is managed are pleasing to the eye and functional. The graphics mean that it's easy to allocate resources and kit out your craft.

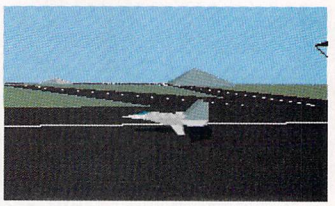
Sound consists entirely of semi-realistic soundchip noises attempting to sound vaguely helicopter or laser-beamish. Still, with this much graphical data in memory what could you hope for?

VERDICT

After the superlative intro sequence, you almost expect to be let down by the gameplay in *Armour-Geddon*.



■ **Oops. It's all gone horribly wrong. Listen, these fighters aren't terribly easy to fly, you know. All those knobs and levers just confuse me. Oh no, the ciggie lighter looks just like the eject button... Basic design flaw, I reckon**



■ **Ah, that's better. Should have known better than to overload the old crate. Just unload a few missiles at some unsuspecting targets and the artificial horizon indicator starts looking a lot healthier, ta very much**

You're not. The game has a wonderfully tense feel to it – you know that you're up against it and simply letting loose a silo of missiles isn't going to save the day.

Each craft has a completely different control feel to it. The aircraft particularly aren't easy to fly; drop out of the sky too quickly or overload one and you soon find your bum skidding across the floor with a blazing canopy about your ears.

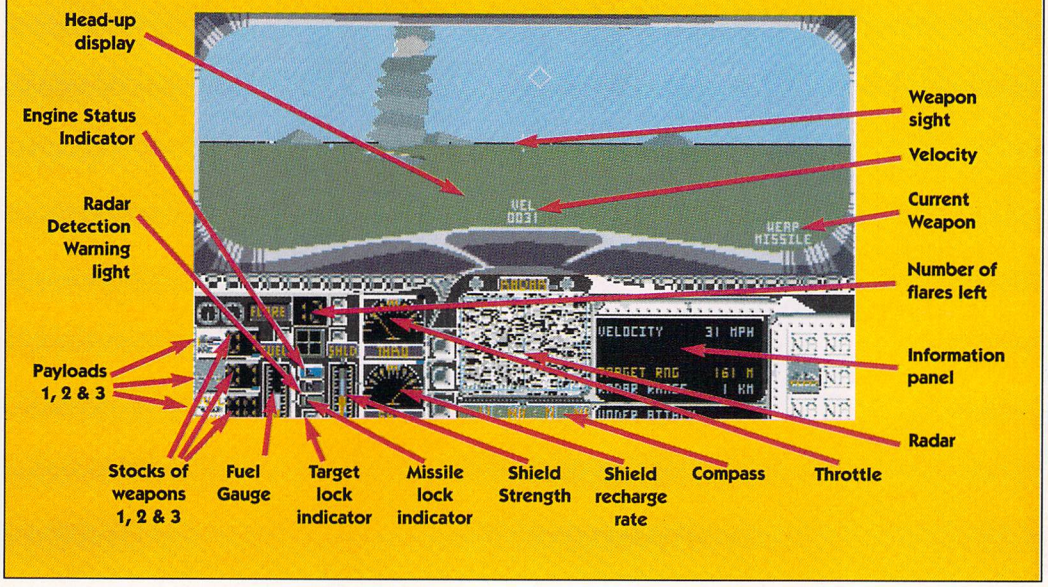
If you enjoyed *Carrier Command*, then you'll love this game. There's an ultimate objective to be reached and lashing and lashings of gameplay to make you want to do it. Armour-geddon a lot of fun out of this game.

ANDY HUTCHINSON

GRAPHICS	9
SOUNDTRACK	8
INTELLIGENCE	9
INSTANT APPEAL	8
LONG TERM INTEREST	9
OVERALL	**91%**

NO, MR IRONSIDES, THAT'S THE HORN

The dashboard layouts of all vehicles are similar. The payload indicators are always in the same place and the weaponry works in exactly the same way on each craft. Best ground craft is the hovercraft, best aircraft is the fighter. Both of these are nippy, manoeuvrable vehicles which are great for hit and run tactical strikes



MICROPROSE £34.99

F-15 Strike Eagle 2

ST FORMAT GOLD



■ If you played every single flight sim ever released for the ST you'd probably be a fully-fledged pilot by now. *F-15 Strike Eagle 2* is yet another addition to the ever-growing range. All right, so it's got solid 3D vector graphics, complex gameplay and heaps of useful features – but can it compete in an overcrowded market?

Many people would name MicroProse's *F-19 Stealth Fighter* as *the* definitive flight sim for the ST, and indeed a year after its release it's still high in the charts. But all that could change as *F-15 Strike Eagle 2* hits those streets. Er, takes off.

As a pilot of the eponymous F-15 Strike Eagle, you begin the game as a lowly 2nd Lieutenant with the lofty aim of becoming a General. There are four difficulty levels from Rookie to Ace that require varying degrees of aeronautical skill. On Rookie level, for instance, you don't need to take off or land – it's done for you.

You rise through the ranks by successfully completing missions. A mission requires you to destroy two targets in the particular area in which you're operating, before returning to base, preferably intact. There are six areas or theatres, the easiest being Libya and the hardest Central Europe. Each is swarming with enemy aircraft, ground installations and other features, which if taken out on a mission bump up your score and possibility of promotion nicely. At your disposal are some defensive decoys (chaff and flares), a bog-standard

THE EAGLE HAS TAKEN OFF

F-15 2's Head Up Display has the obligatory initially-bewildering amount of indicators and controls. Actually, once you've watched the demo and flown the plane on the Rookie level once or twice you find it's a piece of cake. (Which is an odd thing for it to be, but that's American engineering for you.)



Waypoint indicator – indicates the direction you must fly to reach either the primary or secondary targets or a friendly airbase

Heading – 0 is North

Airspeed in knots – a stall speed indicator gradually rises from the bottom if you're losing too much speed

Autopilot Indicator

Chaff and flares remaining – anti-missile defences

Fuel gauge

Satellite Map

Missiles remaining – short/medium range air-to-air and air-to-ground

Missile Targeting Envelope – the target must be within this circle for a possible missile lock-on

Various warning lights

Tracking Camera – displays the currently selected target, together with its range

Nose indicator – this is fixed and is used to attain level flight

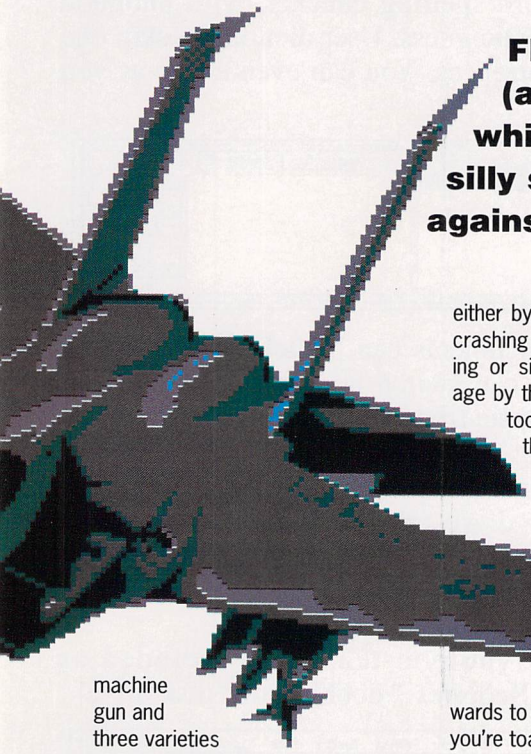
Altitude – in feet. Immediately to the left is the Vertical Velocity Indicator

Tactical Display

Throttle gauge







Flight sim! There, we've said it. All of you who haven't (a) run away, (b) fallen asleep or (c) turned the page (in which case you aren't reading this anyway, so it was a silly suggestion) probably want to know how it stands up against the others. Good job Ed Ricketts is about to tell you

machine gun and three varieties of fire-and-forget missiles – once the missile is locked onto a target, you can safely assume it's history. A mission is ended either by completing it successfully, crashing (because of a bodged landing or simply from too much damage by the enemy), or bailing out at too low an altitude. Either of the latter two mean your career is over and you must start again.

Make it back to base and you're given a run-through of all that happened on the mission. Then it's onwards and upwards to the next one – at least until you're toasted by a MiG-29.

EFFECTS

If you've played or seen *F-19*, *F-15 2*'s display might seem familiar – they're very similar in many ways. The 3D graphics, while not quite state of the art, work well and move realistically. The level of graphical detail may be adjusted to suit both sightseers and those who prefer a faster game.

Including a variety of viewpoints was an inspired move – watching the remote camera track your Strike Eagle as it screams past the SAM missile site you've just nuked is little short of breathtaking. Two grumbles, though: it's perfectly possible to make what looks like a safe landing on an aircraft carrier, only to find that you're actually floating in mid-air six feet away from it. And it would have been nice to see a replay of your mission in 3D after a sortie so you could flick between the views at leisure – changing the view when you're landing, for instance, isn't practically feasible.

The main audio effect is that of your engine and the frequent missile warnings, though there are some welcome speech samples.

VERDICT

F-15 2 is a truly excellent game. Everything about it reeks of quality and time well spent in development. The manual is exhaustive, and covers not only the basic flying instructions, but a tutorial, background information on the various theatres and extensive tricks and tactics. The game itself is not impossibly difficult, even on the higher levels, and beginners should find the autopilot and auto-land features a boon, enabling them to concentrate on the action rather than on the specifics of flight. Landing on an aircraft carrier isn't a task for the faint hearted! The number of missions included and the possibility of further data disks mean you should be kept busy for a long while.

"Watching your Strike Eagle as it screams past the missile site you've just nuked is little short of breathtaking"

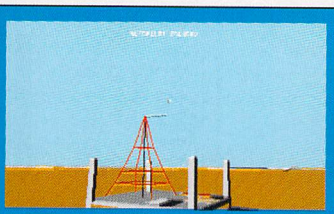
Beginners may probably prefer the straightforward controls of *F-15 2* over other sims. Even if flight sims aren't normally your bag, give it a try anyway. You'll be surprised at just how much fun it is.

ED RICKETTS

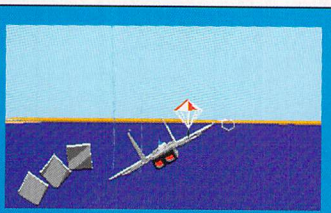
GRAPHICS	8
SOUNDTRACK	7
INTELLIGENCE	7
INSTANT APPEAL	7
LONG TERM INTEREST	8
OVERALL	**90%**

POINTS OF VIEW

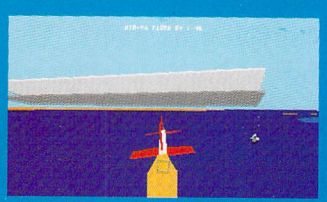
As if simply controlling the plane wasn't enough, you've also got the chance to view it from ten different angles. This can lead to some spectacular effects. It also means you can go crashing into a mountain while you're gawping at the scenery.



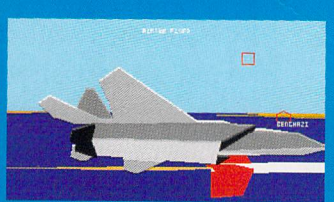
■ **The reverse tactical view** sounds like something an American football player would use, but it's quite simple, really. It's the view from whichever target you're currently locked onto, and it changes to keep both the target and your plane on screen – great for fly-pasts



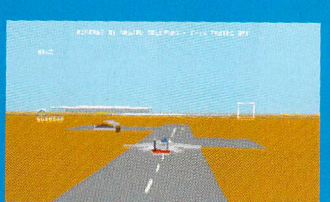
■ **The slot view** is the scene as looked at from just behind the plane. You can zoom in until you're virtually looking up its tailpipes, as you are here. Note the plane you've just shot going down in smoke on the left and the parachute of the enemy pilot as he bails out



■ **For a really hair-raising ride use the missile view.** Your viewpoint is as if you were riding on the back on the missile, so you can follow it all the way to its target. This display mode is so effective, you almost want to flinch when the missile finally makes contact



■ **The side view** is only really useful in two situations: one is to check the state of your landing gear (which, however, is not advisable when you're doing 660 knots) and the other is to watch missiles as they're launched, which is what you can see happening here



■ **But the easiest way to stay in the thick of the action is to use the Director option.** This automatically cuts to any event of interest, such as a missile launch or a hit, whenever it occurs. It can be slightly confusing flicking between the views though, so it's best used in quieter moments

Calligrapher *Junior ?*

Calligrapher Junior is a word-processor with a difference - it has powerful graphic and presentation facilities to give your words more impact.

1 Fonts provided in a variety of styles. **Real bolds.** *Real italics.* Five different families of fonts supplied as standard:

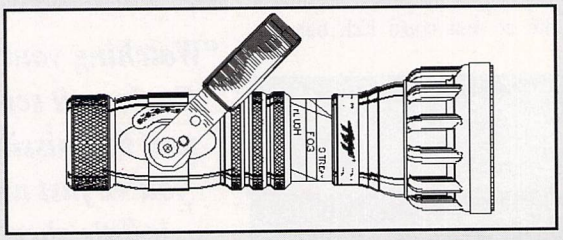
Zurich
Holland, Holland **Bold** and *Italic*
Unitype Medium and **Bold**
MathSymbols αβχδεφ γηABXΔEΦ
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2 Vector outline fonts allow you to print big headlines or small print from 6pt to 128pt.

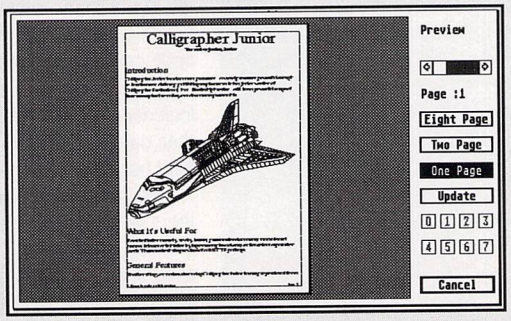
small print at 6pt using vector outline font

48pt Font

3 Imports .IMG and .GEM graphics, which can be freely resized within Calligrapher. You can also convert, crop and manipulate Degas and Neochrome pictures.

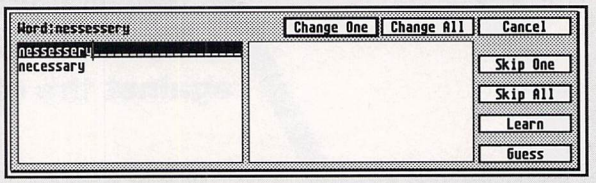


4 Preview your document before you print. You can view 1, 2 or 8 pages at a time.



5 Multiple columns. You can have several columns on the page, edit with multiple columns on screen and preview your work.

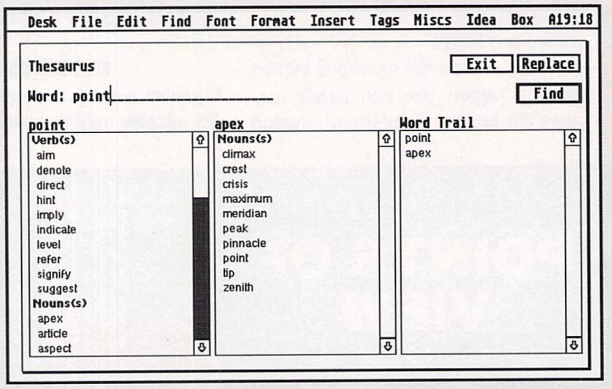
6 80,000 word spelling checker, with phonetic and alphabetic guess. User dictionary, skip one or all occurrences. You can even check as you type.



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9 200,000 Synonym thesaurus included as standard. (Requires 1 double sided disk drive).



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11 Footnotes with identifying numbers. You can put almost anything in footnotes that can be included in normal text.

12 Calligrapher Junior can run on a 520 ST and is provided on single sided disks. 1Mb of memory is recommended.

13 Costs only **£69.00** all inclusive.

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UBI SOFT £25.99

Maupiti Island



■ Those people from Lankhor are back with *Maupiti Island*, a new game of intrigue, tropical islands and not a small amount of strange accents (and you can be sure "Maupiti" means something unspeakably offensive in Tahitian)

One of the most popular characters in fiction has always been the private detective (writes our crime correspondent). *Maupiti Island* sets you up as one Jerome Lange, star of Lankhor's previous and little-known adventure *Mortville Manor*.

While Jerome is travelling to Japan on a friend's yacht, a hurricane is predicted. Rather than risk being blown overboard he takes refuge on Maupiti Island. While there, he learns of the kidnap of a girl called Marie, one of the islanders. The locals ask for his help, what with him being world famous and all (well, world famous in France, at least). He accepts and the game begins with you as Lange on the yacht just off Maupiti.

At first you don't have a clue what to do, but as you wander around, searching things, examining objects and questioning the characters present, you begin to build up an idea of what happened. Everything is mouse and menu controlled, so there's no typing whatsoever.

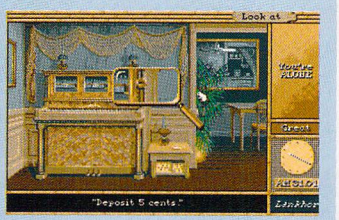
The characters are one of the main parts of your investigation. You need to keep a close track of what they say and their movements so you're ready to pounce on them when they slip up.

RAAAHND THE OLD JOANNAH

There's plenty to look at in *Maupiti Island*. At first you might think there aren't many locations, but each one is packed with things to examine and you can't get anywhere without searching meticulously for clues.



■ The well, for instance, looks innocent enough. A pleasant setting with butterflies flitting about among the foliage and very little to look at. Give it a really thorough search, however, and you discover a cent



■ Now where could you use a cent? Well, you just happen to know of this bar that one of the characters owns. In the bar there's a pianola that looks as though it's just begging to be fed, as an examination soon confirms



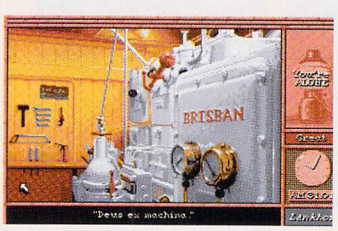
■ Stick the cent in and voila! (it's French, remember) you're presented with a list of songs it can play. Let's see now – anything by Van Der Graaf Generator? Thought not – how about *The Waltz of the Four Drunks*...?



■ And the lovely (?) music comes drifting through your speaker. You may not be any further on in your investigations, but it's fun to mess about like this and soak up the great atmosphere. "My old maaaaan..." *etc*

EFFECTS

French games have a reputation for graphical wonderfulness, and *Maupiti Island* is no exception. Each location has an exquisitely drawn graphic which is full of detail and reeks of atmosphere. The characters, when you meet them, have completely individual features and look totally believable. But what really makes *Maupiti* stand out are its audio effects. Again, each location has a different set of sampled sounds – waves breaking on the sea, monkeys screeching in the jungle – that heighten the atmosphere immensely. The characters actually speak when you question them, and not with that robotic voice most ST speech synthesisers use. It sounds as though Lankhor have digitised individual syllables and strung them together into words. Occasionally the game breaks out into a wonderful burst of sampled music that is just sleazy enough to suit the mood perfectly.



■ Not far from your starting location you find the ship's engine. Turn the lever and it kicks into life. You never know, making a quick getaway on your ship might come in very useful later on in the game – but on the other hand, it might not. Dear me, all these choices



■ Talking to characters is just a matter of clicking on the questions you want to ask – you can't type in questions. You've got the option to disagree with characters, contradict them, bribe them or even hit them, just like a journalist. Oh! What have I said...



■ Once you've found a character, you can follow it to see what meetings it gets up to. But the last laugh may be on you if a murder has been committed elsewhere while you've been following Gavin the schoolboy behind the bike sheds for a quick fag

VERDICT

It has to be said, you're bound to be drawn in more by *Maupiti*'s graphics and sound than by its gameplay. But once you're there, you realise there is actually much more beneath the surface than you'd reckoned on.

What appears to be a small number of locations, characters and objects is hiding far more than you'd think, and finding the truth amid the welter of red herrings, clues and lies could take you a while. Luckily, you can store any particular statement made by a character in memory for later recall. Clever, though you still need to make plenty of notes.

Special mention must again be made of the game's audio effects. *Maupiti* is one of the very few ST games that has been really worked on in this department – it's usually a case of a few spot effects and that's your lot. It shows just how some decent sampled effects can enhance a game by several orders of magnitude, and other software houses would do well to take note.

ED RICKETTS

GRAPHICS	9
SOUNDTRACK	9
INTELLIGENCE	8
INSTANT APPEAL	7
LONG TERM INTEREST	7
OVERALL	**79%**



■ A rather well protected End-Of-Level-Guardian needs a concentrated attack if it's to let you past safely onto the next wave. Do you have the ammo and the skill to come through it alive?



■ Protected by the shield, you can go exploring in the higher level caverns like this one. But watch out for static defences, throwing out a frightening amount of firepower in your direction



■ Over the jungle you need to dodge the fireballs whizzing down. It's at times like these that you start wishing Core could have added that extra little bit of speed to your craft



■ You've made it to the spiders' lair. The spiders are blocking your path so you must blast them out of the way. Here's where any pick-ups you might have collected come in really useful

CORE DESIGN £25.99

Frenetic

It's the 23rd Century, but this doesn't matter. The Interstellar Alliance is crumbling and anarchy is about to engulf the Galaxy, but this doesn't matter either. All you need to know is that *Frenetic* is a 2D vertical scrolling shoot-'em-up.

You've been given a spaceship which fires little bolts of laser energy out of the front, and your sole aim is to get this craft through eight levels of nasties. Exactly as you'd expect, things start off fairly easy and get progressively harder as you trundle along, wasting the hordes of extra-terrestrial lifeforms you encounter. Unsurprisingly, there are also eight End-Of-Level Guardians which require a great many more hits to destroy. As a game format, *Frenetic* isn't going to win any awards for novelty.

After wading through the 23rd Century claptrap, the first thing you notice about the game is that it isn't particularly fast. Your craft takes what seems like an age to cross the screen, and it feels very sluggish during the bog-standard avoidance of wayward aliens. The laser bolts seem to fire at an acceptable rate, though, so you aren't doomed. And come to think of it, the aliens generally move around at a pretty slow pace as well.

EFFECTS

So as it enters stage right, *Frenetic* does not look good. It isn't very original and it seems too slow. But keep at it and it gets slightly better. The graphics – nothing to write home about when you first see them – become more competent as new aliens and levels are introduced. Later, you might even suspect that someone with imagination has had a go at designing the visuals. But sadly they never become particularly awe-inspiring. Sound is generally limited to a mindless and repetitive tune, interspersed with clunking lasers and splatting aliens. This is a pity because good sound effects might have rescued the game.



■ The vertically-scrolling levels of *Frenetic* are dotted with tough nasties like this fellow. He curls menacingly towards you, but train your fire on his head and he loses heart and disappears in a puff of smoke (and brains) – you hope!

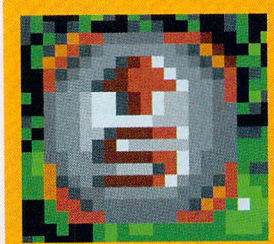
VERDICT

Originality? Mind stretching? Forget such notions. *Frenetic* is a shoot-'em-up. A game of yesteryear. It has medium slow speed, poor sound and fairly nice graphics. But if you love the genre, you could get into it. The skill levels are set about right and mechanics such as collision detection work well. For most people, that won't be nearly enough.

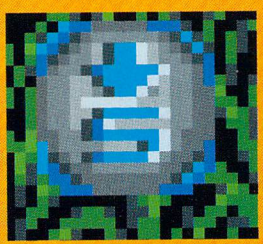
JAMES LEACH

GRAPHICS	6
SOUNDTRACK	4
INTELLIGENCE	2
INSTANT APPEAL	6
LONG TERM INTEREST	4
OVERALL	**51%**

AND WOULD SIR CARE FOR A LITTLE PICK-ME-UP?



■ **Speed up**
This item increases the speed of your spacecraft to the point where the man with the red flag is no longer able to walk in front of it. Instead he bursts into a jog



■ **Slow Down**
If you're using a Speed Up, this returns you to normal speed. If you're at normal speed anyway, you're going to be in trouble. This isn't really worth collecting



■ **Shield**
This is the blue lozenge shape seen around the edge of the spacecraft. It slowly decreases with time, but while it lasts you're completely invincible



■ **Sideways Laser**
This follows your ship, firing either left or right, depending on which version you collected. It's invincible, but you lose it and all your pick-ups when you lose a life



■ **Missile Launcher**
This also follows you and regularly burps out a homing missile which heads for the nearest alien. The missiles explode if they don't meet an enemy in about 5 seconds

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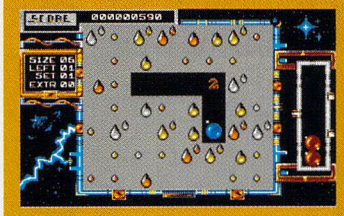
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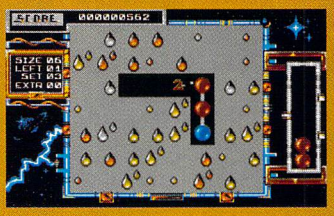
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THERE'S A MADNESS TO THIS METHOD

On certain levels you have a particular pattern you must fill with the atoms. Here all the right atoms are presented to you, but not necessarily in the right order. Arrange them incorrectly and you're in all sorts of trouble, because the following atoms don't fit in easily at all. It's a bit like a jigsaw puzzle with all the pieces looking the same...



■ The first atom has only one free combination, so it obviously has to go in one corner, because you can only join it on one side. The next is a two-er, so put it at the junction because this means both prongs of the pattern can now be joined



■ A second two-er joins the first to the one-er. Judging from the pit to the right of the screen display, it's two-ers all the way, which is just what you need. Just keep plonking them next to existing molecules and you're always sure of a free combination



■ Finally, you're left with one free combination and a one-er in the pit. Isn't that a convenient coincidence? Actually, this level is a piece of cake, but then it is only level three... (To be continued)

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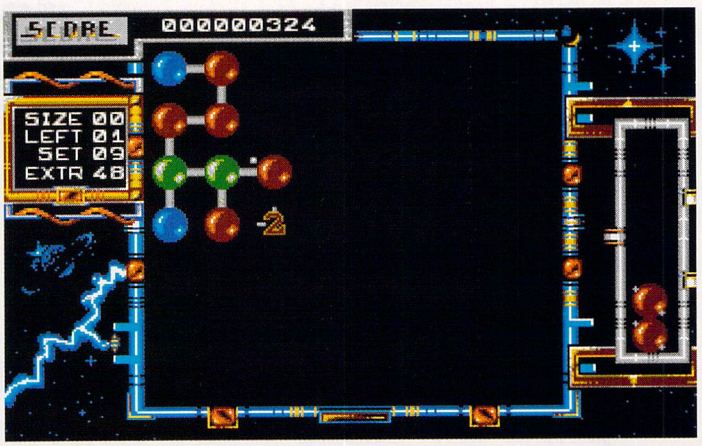
Atomino

tomino definitely earns the coveted title of This Month's German Puzzle Game Which is Dead Easy to Learn But Impossible to Master, picked from a jostling crowd of one. The aim is to build molecules from atoms and have fun doing so. See – Impossible to Master.

You're presented with a clear part of the screen and a pit to the right of it into which fall atoms. These atoms have a certain number of free combinations, indicated by circling dots, ranging from one to four. The number of combinations determines how many other atoms the said atom can join with – one free combination means it can join with one other atom. A collection of atoms that are joined with no free combinations left forms a molecule and disappears from the screen.

Your job on each level is to complete a given task, the simplest of which is to create a certain number of molecules. The cursor indicates how many free combinations the current atom has; pressing "Fire" places it, and atoms may be swapped with existing atoms.

There are complications. The longer a level goes on the faster the atoms fall into the pit. When the inevitable pile reaches the top, it's Game Over time. Also, certain atoms may be fixed to the board, have no combinations at all or be Joker atoms that fit anywhere.



■ *Atomino* is about sticking atoms together to make molecules. Challenging, even if you sat through those long, dreary Physics lessons about atomic bonding

EFFECTS

It's easy to write reviews of puzzle games – just substitute appropriate phrases into the right place. Thus: "Since this is a puzzle game, the graphics are strictly functional." It's true, though – the atoms are attractive enough, but apart from a title screen the main play screen is all you get. Same, too, with the audio effects – there's an attempt at some music but it's not going to make you jump in joy.

VERDICT

Atomino is a completely stripped-down puzzle game and makes no pretensions at anything else, so it stands or falls on the enjoyability of the puzzle. It's a fast game – most of the time you work by instinct, because you simply don't have time to plan ahead much. In the end, you can take it or leave it, and many people may greet it with indifference. It's not likely to go down in history as one of *the* puzzle games, but if you're into sub-molecular atom-arranging you're in for a wild time. (And good luck to you.)

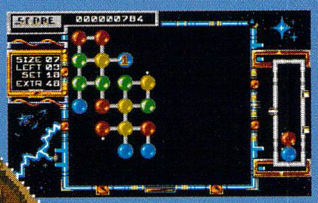
ED RICKETTS

GRAPHICS	6
SOUNDTRACK	6
INTELLIGENCE	9
INSTANT APPEAL	7
LONG TERM INTEREST	7
OVERALL	**74%**

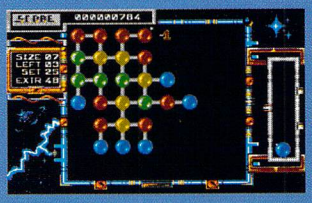
ATOMIC VALENCES? DON'T TALK TO ME ABOUT ATOMIC VALENCES

There are two modes of game. The first is level based, with a certain task to complete – to create a certain number of molecules, perhaps, with or without a set number of atoms; complete a set pattern (see box above); or make some existing immovable atoms disappear by building molecules around them. The idea in the other mode is just to score as many points as possible – not nearly as interesting

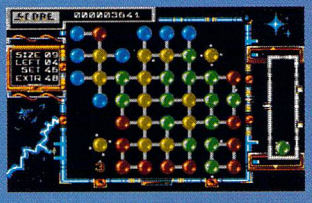




■ When making a molecule with a required number of atoms, it's not reaching the number that's the problem, it's finishing it



■ But eventually you can use your skill, cunning and dexterity (but not luck, of course) to finish it off. Onto the next one – just two molecules of at least seven atoms



■ Er – help! It all looked so easy to begin with, but the molecule just got bigger and bigger. It's here you start flinging atoms down willy nilly in the desperate hope it might work out...

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GAMES

BG.01 Monopoly; Classic property game. Plus: Chess, Backgammon, USA Football.
BG.02 Haunted House; Platform game. Plus: Daleks, Aggravation, Warzone..
BG.06 DGDB; Gauntlet style game. Plus: Stone De-luxe, Breakanoid and Fruit Machine Simulator.
BG.14 Invasion; STAC produced text and graphics adventure. Plus: Cluedo style detective game and Paranoia...
BG.17 Spooks; Super Pac-Man version. Plus: Pipe Panic; arcade favourite!
BG.18 Megaroids; Asteroids version. Plus: Line Up 4, Hangman, Explode, Blaster, V-Kill; Virus Killer.
BG.19 Cards; Cribbage, Poker squares, Solitaire, Klondike, Blackjack. Plus: Rubics Cube, Fun Face...
BG.20 Dungeon Master; Maps of levels showing doors, treasure etc. Plus 40+ pages of information, hints, tips...
BG.24 Give us a break; version of the pub snooker/trivia game.
BG.27 Strip Breakout; Knockout bricks to reveal a naughty picture...
BG.34 Assassin; Excellent graphic adventure written with STAC.
BG.43 Wizards Tower; Superb text and graphics adventure written with STAC.
BG.44 Zoltar II; Super shoot-em-up game with digitised sounds!
BG.45 Orbit II; Superior Arkanoid copy, compiled STOS game!
BG.47 Vegas Gambler; Professional Casino style games: Roulette, Poker, Blackjack and Slot Machine!
BG.55 Froggy; Classic road crossing game. Plus: Caves of Rigel; maze game.
BG.56 Cribbage, Checkers, Yahtzee, Target and Joust, Arcade classic!
BG.57 Dungeon Master - NEW Dungeon created using Dungeon Master Editor! Original Dungeon master required!
BG.58 Soko; Original addictive 50 level puzzle game. ST Format ****
BG.59 Bubble Trouble; Smooth Pacman variation. Jumpster; Q-Bert style...
BG.62 Millipede; very good version of the old arcade classic.
BG.64 STumped; STOS produced tactical cricket game. STOS not needed to run!
BG.65 Joust; Arcade game version. Space War; space strategy game.
BG.66 Mystic Well; Dungeon Master style role play adventuring game.
BG.67 Temon; Shoot-em-up construction kit produced arcade game.
BG.68 Die Alien Blob; SEUCK produced vertical scrolling action game.
BG;69 Trax Quiz; Well programmed quiz game based on pub trivia machine.
MG.01 Bolo; Arkanoid variation, bat can move all over screen! (col/mon).
MG.04 Bumper Jack; STOS produced platform game. Plus Yatzy; dice game.
MG.05 Mars Maze; another excellent STOS produced platform game.
MG.08 Star Trek - Next Generation; Battle the Ferengi in this strategy game, digitised samples! (Not STE)

UTILITIES

BU.01 Neochrome MASTER; Will now load Degas and IFF format! Animation fully implemented, total keyboard control, object rotation, 10 screens, rasters.
BU.07 STWriter ELITE; high quality word processor. Fully documented!
BU.29 Label printing accessories; address, disk and cassette labels.
BU.34 B-Boot; Enables booting from drive B, address book, database etc.
BU.36 Assistant Chef; excellent recipe database for the cooks...
BU.37 Pools; expert results predictor, includes large match database!
BU.39 Fractal Zoom; comprehensive fractal generation program.
BU.42 GEM fonts; 60+ fonts for hi-res screen and Epson printers.
BU.44 .IMG utilities; convert Degas, Neo, Tiny etc. to .IMG format!
BU.45 Planetarium; Astronomy, view the stars from anywhere in the world.
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BU47 Eplan; CAD program for design of electrical circuits, documentation on disk. Print out finished circuits!
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BU.68 Magniwriter; ST Writer version with larger text! Ideal for use on TV, for children or poor eyesight!
BU.72 STE Boot disk; enables STE to boot up in medium resolution! etc...
BU.73 Noisetracker; Conversion of the Amiga PD music program; Soundtracker! Complete with sampled sound modules.
BU.74 Electronic Bank Statement; keep your bank account under control!
MU.05 Sheet v2.0; powerful spreadsheet with documentation and tutorial, Lotus compatible, 1280 rows x 280 columns!
MU.07 Gemini; superb NeoDesk style desktop replacement! German origin.
MU.12 Hard disk utilities; invaluable aid to hard disk users...
MU.13 F-Copy 3; Superb copier, will even backup some copy protected disks! Features: Fast Format, Virus Check, Scan Disk, Multiple copy, Verify...

EDUCATIONAL

BE.01 Things to do with numbers; full working demo! Plus: Kid Publisher...
BE.02 Kidprogs; Kids Graph, Kids Grid, Kids Music, Kids Piano, Kids Notes...
BE.03 Kidprogs; Kid Potato, Kids ABC, Kid Sketch, Kid Story...
BE.05 Colourbook; Fun for the younger child, an on screen colouring book!
BE.07 Word Extract, word puzzle help. Plus: Starchart; astronomy program.
BE.08 Geography Quiz; good educational game, plus Maths Made Easy.
BE.09 Spelling Made Easy, educational program that talks to you!
BE.10 Jigsaw; load any Degas picture as jigsaw puzzle! Great fun!
BE.11 KShapes and KShapes Plus; great Fuzzy Felt style fun for youngsters!
BE.12 Shipwreck; Answer sums in this fun game! + Guillotine Man; Hangman.
BE.13 The Wolf and 7 kids; superb multi-choice adventure game for the little ones. Race Cards; give answers to addition sums to race cars. Great!
BE.14 Noah's Ark; unscramble letters to make names of animals.
ME.02 EZGrade; teachers grading prog. Molgraph demo; 3D molecular display. Easel ST demo; loads desktop picture.
ME.04 Search; good historical study program created with STAC.
BE.15 Body Shop; learn about human anatomy, build skeleton and assemble organs while learning correct names.
Dot to Dot; join the dots to discover the hidden picture! Also, design your own dot to dot picture. Both programs are great fun for young children!
ME.05 Play Spell; 2 levels from this great educational platform game. B.Spell; spelling game with digitised letter sounds & speech!
ME.06 Kid Publisher Professional! Desktop publishing for youngsters! Plus; Super Kidgrid; picture maker. Kid Painter; simple paint program. Design jigsaw type puzzles with ease! (Demos; save/print options disabled!)

CLIP ART

DC.01 Small symbols; seasonal, flags, school, cars, Disney, creatures...
DC.02 Titles, headings, Christmas, Easter, Hallowe'en, golf, sports...
BC.03 Logos, Trade marks, symbols, people, food, magazine titles...
DC.04 Alphabets, Christmas symbols, lots of eyes, happy, sad, weird...
DC.08 Garfield, Beano, Dandy pictures. Picswitch enables easy view & print!
DC.09 Viz Magazine; comic pictures, plus culinary; utensils, food...
MC.01 Boys and Girls; Pictures of small children at play.
MC.04 Illuminated Letters; Fancy A to Z. Plus; Funny pictures...

MUSIC

SO.01 Midi Special; Steinberg switch, 32 track sequencer, midi channel scope, hi-tech trivia.
SO.02 Composer; enter notes from midi keyboards or computer, copy, transpose or output. Plus: Soundcomputer.
SO.03 16 Voice Synthesiser; multi voice record, filter of controllers, variable resolution metronome...
SO.05 Alchimie Jr.; powerful midi sequencer, many features! (mono) (D/S).

HELP

DA.01 66 Adventure game solutions! Including: Future Wars, Bards Tale, Indian Jones, Zork 1, 2 and 3...
DA.02 62 Adventure game solutions! Including: Leather Goddesses, Kult, Ultimas 1 to 5, Space Quests...

DEMOS

BD.26 Snowman; digitised animation and music. 1/2Mb version! (D/S)
BD.33 STE demo; See what your STE is capable of and be amazed!
BD.34 What the Butler Saw; end of the pier style fun. Slightly naughty!
BD.38 ANI ST; 2 excellent animations produced with ANI ST (see: BU.57) Juggling Lamps and the Trash Can demo.
BD.39 Teenage Mutant Hero Turtles: Excellent sample of the Turtles theme tune plus picture. Great one for kids!
BD.40 Smooth Cyber Studio produced animation featuring a space station revolving on a starry background!
BD.41 Monarch; Impressive animation with excellent graphics and music.
MD.15 Snowman; digitised animation and music. Brilliant! (Mb)
MD.21 The Brilliant UNION multi demo colour monitor & joystick required!
MD.22 UNION Demo 2; The cuddly demo! Lots of amazing animations accessed by moving an arcade style jetman!
MD.28 Whataheck; demo collection by the Carebears again. Stunning!!
MD.30 Cyber demos; Buzy Bee, Saturday Morning Workout, Chasers, - superb animated films from Cyber Studio.
MD.32 STE Demos; 400 colour version of the Amiga classic BOING demo. Movie ST; Animation using hardware scrolling & blitter routines!
MD.35 Aliens; digitised sound and pictures from this Sci-Fi classic!
MD.38 Probe; Animation of a Voyager style space probe slowly spinning in space then moving around a planet.
MD.41 Robocop; Digitised samples of some of the more memorable sections of the film plus digitised sound! Approximately 7 minutes long and comes on 2 packed disks! (not STE).
MD.42 When Harry Met Sally; The very amusing bit from the film where Sally demonstrates to Harry how to fake...
MD.43 Star Trek; Good sample of the opening sequence from the TV series plus a superb Enterprise animation...
MD.45 Jungle demo; graphically super amusing cartoon style animation with sampled music and sound effects! (STE)
MD.47 Police Squad; sampled opening sequence of this great series! (Mb)
MD.50 So Watt; Care Bears do it again. Great sounds and mega smooth graphics.
MD.51 Dark Side of the Spoon; superb collection of stunning demos!
MD.52 Robomix Demo; digitised scenes from the film with sampled speech, sound effects and soundtrack!
MD.53 Chad Jackson; hear the drummer get wicked; Stos Maestro, Neochrome used on this sampled sound demo!

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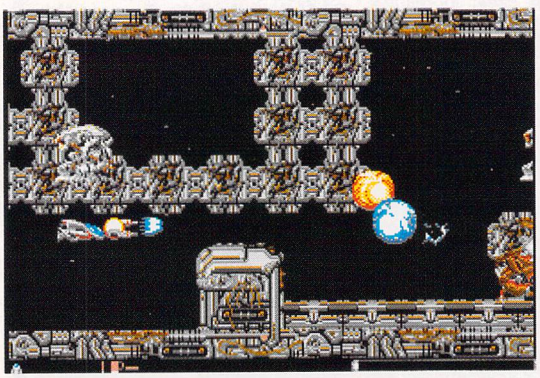
R-Type 2



Back in 1988 there appeared a coin-op shoot-'em-up conversion that took the world – well, quite a few people, anyway – by storm. That magnificent game was *R-Type*, and now, long overdue, here's the follow-up.

There's little change in the plot from the first version – er, what plot there was. Having defeated the evil Bydo empire at the end of that game, you must now – well, defeat it again, actually, by flying through five horizontally scrolling levels and shooting five shades of sugar out of the Bydos.

Along the way you encounter small droids which, when shot, leave behind crystal tokens. These you eventually come to recognise as extra weapons. It may be the small shiplet you can affix to the front or back of your craft, providing extra firepower as well as protection; or enemy-seeking missiles; or the bounce laser that scythes through the enemies like a hot poker through slightly congealed fat. Combine two or three of these and you're virtually unstoppable – at least until you get killed (I said "virtually," remember), whereupon you revert to your normal puny self.



■ ***R-Type*, the game that virtually invented power-ups, organic aliens and end-of-level guardians, makes a loud, aggressive yet strangely welcome comeback in the game with the terrifyingly original name, *R-Type 2***

EFFECTS

99.5% of the world's population – that is, everyone who's played *R-Type* – should find the graphics familiar. Your R-9 fighter is exactly the same and so are all the bits you can bolt onto it, though of course the new weapons demand some new graphics. In play, the scrolling seems a little slower, but the increased difficulty level warrants this. Other graphics –

HAVE A NICE TRIP HOME, DEAR...?

Although the levels are ostensibly set in different areas, they all contain basically the same elements: plenty of flying nasties, huge slow-moving spacecraft (à la *R-Type 1*), gun emplacements in the most awkward places and an unfeasibly large end-of-level guardian

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Switchblade 2

Hiro's not having a good time of it. Having defeated Havoc in *Switchblade* he was looking forward to a quiet retirement with the aforementioned blade securely ensconced on the mantelpiece. Then Havoc pops up again and, with a tired sigh, Hiro's forced to get after him, pension book in hand.

As you might guess from the screenshots, this is a platform game played over six levels. The overall aim is to reach Havoc and do him in, but most of the time you're battling his minor minions and trying to find a route to the next level, which is never easy.

You begin with a knife, which may sound weedy but is actually the most powerful weapon you can have. However, it is only useful for combat at close quarters, so it's worthwhile searching out the other



■ **A hero, a weapon and lots of lovely platforms. All beginning to sound a wee bit familiar, perhaps? You may have seen it all before, but Gremlin are hoping you want to see it all once again in *Switchblade 2***

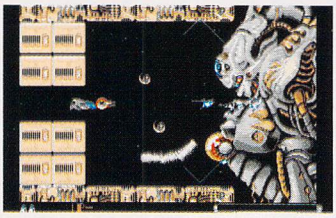
GOING UNDERGROUND – BUT MAKING YOUR



■ **Things look nice and simple to begin with – just that termite thing to kill... Now find your way to the tunnel for the underground action**

■ **But it soon gets a little more complicated. Here's where you first become stuck, because you just can't jump that tall box**

■ **What the manual fails to tell you is that you can jump much higher by crouching down (holding the joystick down) before jumping**



■ If the end-of-level aliens got any bigger you'd need two monitors to play the game. Actually, although this huge mass of organic machinery and gruesome biomech looks like it could scare the pants off King Kong, it turns out that all you need to do is poke it in the eye a few times and it runs away

ships, aliens, guns – are nicely detailed and colourful, but they don't move particularly smoothly. Missing, too, is that believably "organic" feel that left you not quite knowing whether the walls and background were actually alive or not. And those tunes are back – the ones you can bear hearing once or maybe even twice, but any more and you wake up in the middle of the night with them running through your head. Then you know it's time to turn them off in favour of the spot effects.

VERDICT

As enjoyable as *R-Type 2* is, it doesn't quite reach the heights of the original. The graphics have lost that weirdly effective organic quality but offer nothing startingly new. The



■ Despite all the bits of weaponry you can pick up from the tokens, there's nothing more effective than your super-laser. Keep the "Fire" button pressed down to charge up your laser until it turns orange, then let loose with the mega-shot. It fragments and destroys almost everything

original was such a superbly addictive blast that it seems a shame to follow it up with what amounts to basically the same thing. As a game in its own right, *R-Type 2* is passable but nothing special – a straightforward blaster that may appeal to those who haven't experienced its prequel. Those who have, approach with caution.

ED RICKETTS

GRAPHICS	8
SOUNDTRACK	7
INTELLIGENCE	5
INSTANT APPEAL	8
LONG TERM INTEREST	9
OVERALL	**78%**



■ Near the start of level three you encounter this rather big ship, bristling – yes, *bristling* – with gun emplacements. You can destroy the outer guns, but the inner ones are protected by the niche in the ship...

■ All you can do is wait for the ship to pass, carefully avoiding the shells from the remaining guns and also the flames that spurt from the upper part – very easy to forget, but very annoying if they end up getting you

■ Through to a clear space, but no sooner do you begin to hope for a breathing space than you're set upon by masses of flying sausage thingies, who just happen to fly into the space where you're hiding. Clever little baskets, they are

■ Oh Gawd, another flippin' ship. This one not only has gun emplacements but also drops those walking aliens that fire up at you – *and* it spurts out those flames. Concentrate on knocking out its guns, then manoeuvre under it

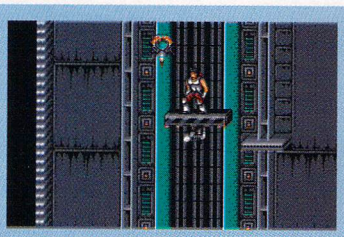
■ With a bit of luck you can clear the ship and sail into the next empty patch. Rest assured, though, it's not as empty as it seems – and this is nothing compared to what awaits you in the coming screens... (Cue, as is the custom, ghoulish laughter)

weapons that can be found strategically stashed – inevitably in life-threatening places. These include a laser, a flamethrower and the aptly-named Super Homing Missile.

Each level includes the now almost legendary end-of-stage greeblie, but these look positively weedy compared to some specimens seen in recent games such as *R-Type 2*.

EFFECTS

The graphics are distinctly average, though that's not to say there's anything wrong with them. The moderate-sized sprites move smoothly and each is recognisable; the backgrounds do their job without interfering (though there are a couple of nice touches, such as King Kong waving from a skyscraper in the dis-



■ The underground lifts are a real boon when you can't be bothered to jump your way to the top. They're slow, but fortunately nothing else uses them, so you don't have to rustle your paper and pretend to ignore people

tance) and it all looks the part. Sound effects, as usual, have been taken from The Atari ST Stock SFX library, and are best forgotten.

VERDICT

Surprisingly, *Switchblade 2* is a very



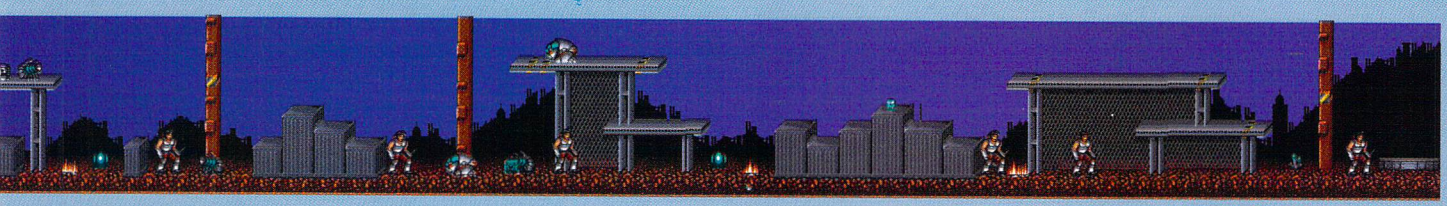
■ In each level you find a handy shop. Strangely enough, all the shops are owned by one of those Japanese-created characters from the cartoons you see on children's telly. Note the cuddly Hiro doll in the corner

enjoyable game. This is surprising because (a) *Switchblade* was dull as ditchwater that's a bit duller than usual, (b) platform games aren't exactly at the cutting edge of gameplay, (c) there's really nothing here you haven't seen many times before in a hundred other platform games, and (d) see (a). *Switchblade 2* is not too difficult and, with a few false starts, level two at least is within your reach, if not the end of the game. It's perfect for when you really can't be bothered to get your cerebral tissue wrapped round anything more taxing than shooting robots. Hiro probably never liked watching daytime TV anyway.

ED RICKETTS

GRAPHICS	7
SOUNDTRACK	6
INTELLIGENCE	6
INSTANT APPEAL	8
LONG TERM INTEREST	8
OVERALL	**81%**

WAY TO THE TUNNEL IS HALF THE BATTLE



■ That "P" on the platform overhead restores the power of your current weapon to full, so it's worth grabbing

■ Getting to this point isn't difficult. Unfortunately, you can't just jump over the pipe and finish the level quickly; you must take the tortuous underground route

■ Climb down the pipe at the extreme right here, wander around underground for most of the level, find the exit – and end up right back here again!

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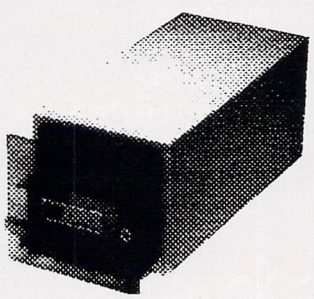
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Screenplay extra

The golden sunlight filtered through the window and lovingly lit the warm soft pages of an open ST FORMAT. The words "Screenplay Extra" glimmered briefly in the shaft of light. And by a remarkable coincidence...



CREEPY

Atlantis – £6.79

Way back in the mists of time, when the Spectrum was *the* machine to own, Ultimate produced a game called *Atic Atac* for it. For its time it was a superb bit of programming. Now it makes an unofficial return in the form of *Creepy*. In fact, *Creepy* is an absolutely unashamed clone of *Atic Atac*. It's a shoot-'em-up viewed from above and involves rushing about a castle, shooting and avoiding the monsters, grabbing food and other weapons whenever you can get them and sometimes visiting the shop where you can buy more weapons, helpful potions and extra energy.

For a *STOS*-written game, *Creepy* has fair graphics and gameplay. If you've played *Atic Atac* you've played *Creepy*, though if anything the original game is actually a little better. That's either a testament to Ultimate's programming skill or an indictment of *Creepy*. You decide.

STF Rating – 72%

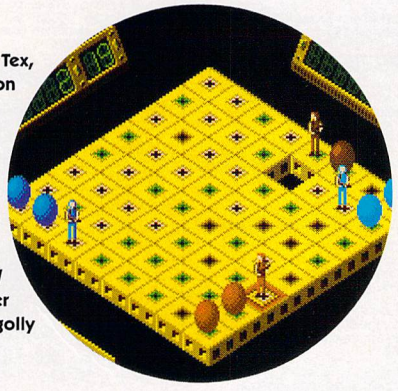
■ **In the ballroom (bit *Creepy*, if you ask me), we find our hero being hassled by a lady with a problem and what looks like some sort of dragon. And to the left is the room which Anne Boleyn once glanced at from a coach while travelling to Gloucester**

THE BALL GAME

Electronic Zoo – £19.99

Just what is it about balls that makes them so fascinating for programmers of puzzle games? Just what else can they do with them? (On second thoughts, don't think about it.) The Zoo have opted for the abstract approach.

The Ball Game is played on an 8x8 board, divided into squares, by one to four players. Each square may be one of three colours, corresponding to a points value. The players assume the role of one of the elements earth, air, fire or water, with a particular colour. There are three ways to move on each player's turn: walking, jumping and teleporting. You can only walk to an adjoining square; this creates a ball of your colour on the square you've just left and your score increases by the amount indicated by that square's colour. Jumping means you can move to a square two squares away, even over other balls, and all balls on the surrounding locations will turn to your colour. Teleporting moves you to a random square that hasn't any adjacent balls or players, so if you teleport and there aren't any free spaces, you're out of the game. This is the only way to end the game, and the winner is the player with the most points when this happens.



■ **Waal, Tex, ah reckon it's yer move. But it shore looks like a whole noo *Ball Game* ter me, by golly**

It sounds massively complex, but actually it's simplicity itself to play. In fact there's a sneaking suspicion that it's too darn simple, because after a few games you just get a little bit bored. The boards get more difficult, sure, but that's about all. The graphics, too, are entertaining for the first couple of minutes – the little players trundling about and shooting with their guns to change the colour of the squares – but these too become tiresome. So nothing special, but passable (he said grudgingly).

STF Rating – 73%

IMPOSSAMOLE

Gremlin – £7.99

Monty Mole is looking distinctly aged these days. He first made an appearance back in 1984 on the beloved Spectrum (it's getting a lot of mentions this month, innit?) and seems to have faded into obscurity since then. However, this little-known game is making a reappearance, courtesy of Gremlin's budget range.

Impossamole can be described in a few sentences. It's a platformer (oh what a horrible word), in the same mould as most of the previous Monty games, offering some pretty background graphics, passable animation and very little new in the way of gameplay. There are extra weapons and hidden rooms to find, but that's about as far as it goes.

For platform games to make the grade nowadays, they have to have something special or be just plain enjoyable. Gremlin's own *Switchblade 2* (see page 74) is just one of those games. *Impossamole*, unfortunately, isn't. If it was offered at full price it would be laughed off the shelves, but at this price it's one for those desperate moments when you really really want to buy a game and there's nothing better around. It's not really a bad game, it just joins that huge teetering pile of games labelled "average" that are released and almost immediately forgotten about.

STF Rating – 68%

BILLIARDS 2 SIMULATOR

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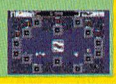
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TEN GAMES WITH FISH IN THEM

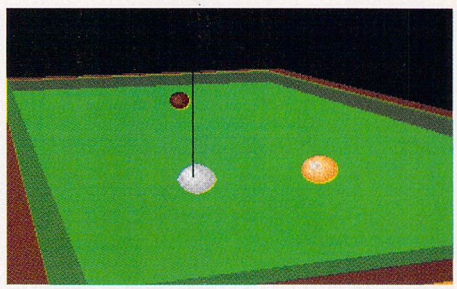
1. *Fish*
2. *Hydra* (you can't actually see them, as such, but they are there, honest)
3. *Monty Python's Flying Circus*
4. *Flood*
5. *Typhoon Thompson*
6. *Hunter*
7. *Toki*
8. *James Pond*
9. *Chuck Rock*
10. Er – er – oh yes! *3D Construction Kit* Game! (Phew!)

hit except by the other balls. A player's turn continues as long as he is scoring points, and the winner is the first to reach 20 points. There are two forms of American billiards: 15-ball and eight-ball. In the 15-ball version each player simply has to pot a numbered ball to gain its number of points; fail and you lose three. The winner is the first to reach 61. Eight-ball pool is the more common variant, played with eight red and eight yellow balls. Each player takes a colour determined by his first shot and aims to pot every ball of that colour, then the black ball. Pocket the black ball before the end and you lose. The weirdest version is Futuristic. This is played on an octagonal table. Each player has a cue ball and three object balls, which must all be pocketed to win. Pocket an opponent's ball and he scores a point.

Stroke strength, cushion friction, rebound, spinning and table friction coefficients can all be changed, and you can play in 2D or 3D modes. There's also a tutorial mode which shows you the path the ball is going to take when hit.

Infogrames seem to have taken longer on the graphics for the intro screens than those for the games themselves. There are some pleasant pics of women languishing around a billiard table, but when you reach the table itself the graphics are very sparse. The balls don't move very well, jerking slightly, and the 3D mode is nowhere near as good as that in Mirror Image's *3D Pool*. Sound is nothing to speak of. It's a pity because with all the configurable parts graphics is the only thing that prevents this from being a first class game.

STF Rating – 71%



■ ***That's*** **why I can't get anywhere in *Billiards 2 Simulator!* Some silly sod has come along and squashed all the balls slightly so they don't roll properly! That's my blimmin' excuse and I'm sticking to it**

SNOTT

Grafic Visions – £12.50 (inc. p & p, from 98 Musgrave Gardens, Gilesgate, Durham)

Grafic Visions is a run-from-home business that aims to give its customers value for money and excellent games. Unfortunately they're going the wrong way about it, if *Snott* is anything to go by.

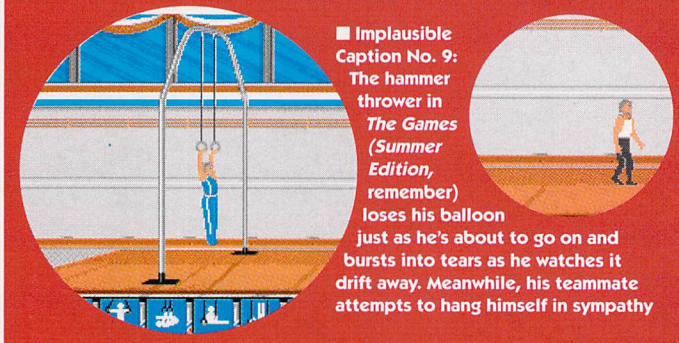
The plot wibbles on about aliens and orbs and things, but what it boils down to is a platform game. You play Snott, a green thing, that has to trundle along and eat these orbs. You can only do that, though, when you've shot them and they start bouncing up and down. You can't actually jump, but you sort of take off and fly about, and pressing "Fire" sends you back down to earth

OOH, GARY, YOU'RE ALL SWEATY

THE GAMES – SUMMER EDITION

Kixx – £7.99

There's always a market for armchair athletics fans, but nothing major has appeared on the ST in that mould for a while. However, after last month's budget re-release of the excellent *California Games*, Kixx is following it with this compilation of Olympic sports.



■ **Implausible Caption No. 9: The hammer thrower in *The Games (Summer Edition,* remember) loses his balloon just as he's about to go on and bursts into tears as he watches it drift away. Meanwhile, his teammate attempts to hang himself in sympathy**

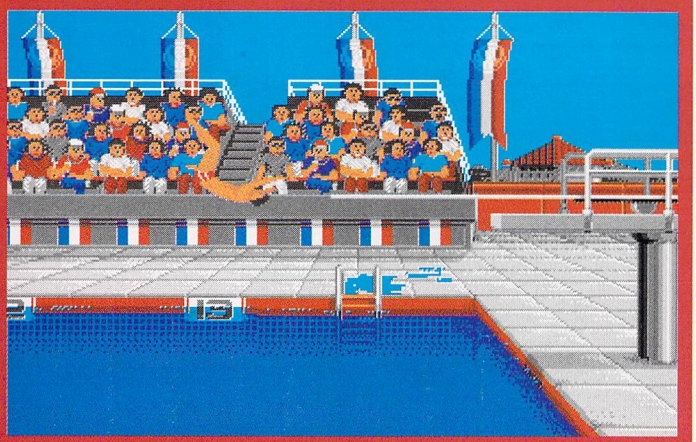
The Games **includes eight events, these being archery, velodrome cycling, diving, hammer throw, hurdles, pole vault, uneven parallel bars and the rings. Archery is quite easy to get the hang of – it's basically a test of your aim while allowing for the wind and the strength of your shot. Cycling takes place in a velodrome (a velodrome being one of those circular stadiums that cyclists whizz round in), hence, perhaps, the name. Control here is a bit iffy, because you have to joggle the joystick up and down to build up speed and also move left and right to avoid the other cyclist – if you can catch him. The graphics in this section are very good, and the 3D view of the stadium move exceptionally smoothly.**

Diving gives you another chance to pose. The easiest dive is, of course, the "falling straight down feet-first" manoeuvre, which is probably the first dive you execute until you learn the controls properly. The dives are graded according to their difficulty, so remember – no strain, no gain.

Throwing a hammer sounds as easy as falling off a particularly tall building, but it's surprising how many times it goes off in the wrong direction. Get the timing right – you have to judge the speed and direction of the throw as the athlete spins round – and it sails off into the distance. One good touch is the way that if you send it flying towards the screen the glass shatters with a crunching sound and an impressive graphic display. If you think you'd have trouble simply carrying a pole, let alone vaulting over a bar with it, you'd best give pole vaulting a miss. Controlling the athlete so he (a) doesn't snap the pole, (b) does leave the ground at some point and (c) ends up somewhere in the region of the landing mat takes a lot of practice. But the most trouble comes with the uneven parallel bars. To be successful in this event, you need to study the complicated flow diagram in the instructions, detailing which action follows which other action when you execute each joystick move. Alternatively, you could wildly wang the joystick about in all directions and hope the athlete does something impressive. The same can be said for the rings, which again is governed by a flow chart. Not only that, but each move is scored differently, so you need to know which move scores what to go for top points.

The Games Summer Edition **is excellent value for money. The range of events covered by the game should ensure that even if you don't like a certain event you can concentrate on the others, and a practice option gives you the chance to hone your skills in each. On the whole, the graphics are detailed and fairly realistic and there's some sampled sound. Even the spot effects are above average. About the only minus point is the constant disk swapping. Let's face it, at this price the only thing you can lose are the events.**

STF Rating – 88%



■ **Implausible Caption No. 10: Just as the contestant is about to take his dive, an amateur pilot who was just having a bath in his Cessna accidentally falls out of his cockpit and towards the pool, causing said contestant to hide in fear**



■ **"Oh no," he cried with real terror in his voice, "look at that hideously nasty and threatening mobster that's out to get me in *Sharkey's Moll!* Whatever shall I do?" (Er, load *Midwinter 2*, perhaps?)**

(slowly). You can only leave screens by walking off them, not flying. Each level has a time limit and this is reduced rapidly when a nasty hits you or you're shot by a gun.

The usual thing to do with home-grown software is to make excuses, such as "Oh, they haven't much money, but they're trying". But if they want people to buy their game, they have to make it playable and interesting, whatever the price, because let's face it, when you spend money you're not interested in how small the company is, you just want a good quality game. Which *Snott* definitely isn't. It's *STOS* written and quite frankly there have been better type-in listings for the Spectrum. (Hey! there it is again!)

If Grafic Visions really want to outdo the major companies, Their best bet is to spend much more time developing a really good game. And if it means bumping the price up a bit, do it. One thing's for certain – they're not going to please anyone with this.

***STF* Rating – 52%**

SHARKEY'S MOLL

Zeppelin Games – £7.99

Oh my God, not another *Operation Wolf* clone. Forget the plot – '20s gangsters, etc etc. All that's just a good (or in this case, not so good) excuse for a shooting match. What can we say? Take a look at a game like *Operation Wolf* or *Predator 2*, then imagine something vastly inferior and with not a spark of imagination and you'll have a fair idea of this rubbish. Graphics are childish, sound is basic and the gameplay will keep you amused right up until you hit the reset button. This isn't worth 79p, let alone the asking price. Write to your MP.



■ **They don't make 'em like this any more, thank God. Er, that is, nobody *else* would dare to make one like this... Cue a feeble joke for a feeble game: it'*Snott* a very good one. Sorry for the crap joke, but games like this don't really inspire much else**

***STF* Rating – 39%**

FAMOUS FIVE ON A TREASURE ISLAND

Enigma Variations – £19.99

This adventure, you might not be surprised to hear, is based on Enid Blyton's whizzo adventures of the gang, and is full of those predictable camp and naive phrases. The gang are on holiday with their cousin George (who's a girl, by the way, but who really wants to be a boy) next to the seaside. After a good explore and a meal or three, they soon discover the treasure island and get up to all sorts of mischief, the naughty little minxes.

In play the game is quite limited, the parser being nowhere near the standard you'd expect for a '90s adventure and more akin to those old Spectrum adventures (fourth and final mention, honest). The half-screen graphics are pleasing enough but nothing special, and the whole thing is rather disappointing, particularly considering it's the first official game licence from the Enid Blyton estate. It may suit younger children, but they may have quite a bit a trouble with the outdated parser. Doubtless there'll be follow-ups. Let's hope they do it a little better.

***STF* Rating – 61%**

THE TOP TEN SILLIEST GAME NAMES

❶ *Super Wonder Boy in Monster Land*
❷ *Axel's Magic Hammer*
❸ *Blinky's Scary School*
❹ *BSS Jane Seymour*
❺ *Zak McKracken and the Alien Mindbenders*
❻ *Ivan "Ironman" Stewart's Super Off Road* (is he really)
❼ *Vroom*
❽ *Horror Zombies from the Crypt*
❾ *Buffalo Bill's Wild West Rodeo Games*
❿ *The Official Everton Football Club Intelligentsia* (all right, not strictly a game, but get off my case, will you?)

FORMAT RATINGS THIS MONTH

How did they rate this issue? Here are all the games *FORMAT* reviewed this month

Hunter	**page 60**	**92%**
Midwinter 2	**page 56**	**92%**
Armour Geddon	**page 64**	**91%**
F-15 Strike Eagle 2	**page 66**	**90%**
Games Summer Ed.	**page 79**	**88%**
Switchblade 2	**page 74**	**81%**
Maupiti Island	page 69	79%
R-Type 2	page 74	78%
Atomino	page 72	74%
The Ball Game	page 77	73%
Creepy	page 77	72%
Life and Death	page 62	72%
Billiards 2 Simulator	page 77	71%
Impossamole	page 77	68%
Famous Five on a Treasure Island	page 80	61%
Snott	page 80	52%
Frenetic	page 70	51%
Sharkey's Moll	page 80	39%

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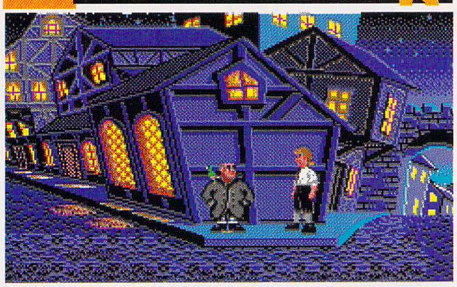


Jeux sans frontières

The artistic influences of the city of Paris have had more than a passing effect on Delphine. The team have built a reputation for producing top-notch graphic adventures like *Operation Stealth* and *Future Wars* – games combining superb graphics with great gameplay and taxing riddles. Delphine have a record arm which produces records for Richard Clayderman (fortunately relegated to the record collections of soppy Grandmothers) but at least this means they've got the technical know-how to produce quality

1 The Secret Of Monkey Island

Released May 1991



£24.99 ***STF* 23: 94%**
Lucasfilm/US Gold **☎ 021 625 3388**

This storming graphic adventure, focusing on your exploits as a novice pirate, proved an instant hit with the Delphine team. Thierry Perreau, one of the team's graphic artists, particularly enjoyed the vibrant graphics. Each scene in the game oozes with detail as the central hero in the game, Guybrush, wanders in and out of the landscape. The humour didn't go unnoticed either. Thierry loved the Pythonesque jokes which permeate the game, but as he rightly points out, "all the humour in the world won't save a game which you can't play. *Monkey Island's* got loads of gameplay in there."

2 Flames of Freedom

Released July 1991



£34.99 **Reviewed this issue, page 56**
Rainbird **☎ 0666 504326**

The wealth of gameplay and strategy was what interested the entire Delphine crew in *Midwinter 2*, the follow up to *Midwinter,* set in a future thrust into an ice age. From a programming point of view, the guys found Maelstrom had crammed an amazing amount of graphic information into the program – just take a look at our review (page 56) to see the detailed animations. Paul Cuisset, the head programmer, particularly liked the underwater sequences, while Christian, the graphic artist, loved the fractal maps. They all agreed that the game's best angle was its realism. "Better than being there," quipped Paul.

3 Indiana Jones – Last Crusade

Released October 1989

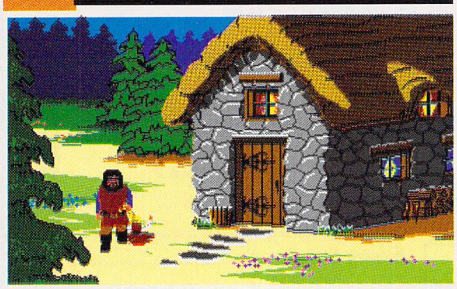


£24.95 ***STF* 4: 77%**
US Gold **☎ 021 625 3388**

Dear old Indy made a famous appearance in this excellent Lucasfilm adventure game, based closely on *The Last Crusade* film. In fact it was in this game that Lucasfilm first started using that famous point and click interface which wasn't fully exploited until *Monkey Island* was released almost two years later. The Delphine crew really loved the puzzles which were incorporated into the game. Thierry particularly liked the background graphics which raised the graphic adventure to new heights of creativity, at the time. "It's a lot of fun," he says. "The graphics and the puzzles worked together well."

6 Kings Quest 4

Released April 1991



£40.85 ***STF:* 78%**
Sierra **☎ 0734 303171**

Patricia is Delphine's customer relations lady. She knows the games better than anyone, because when bemused punters phone up with their problems she needs to know exactly what they're talking about. Working for Delphine, she's become a serious adventure fan and can tell the good from the bad. Of this, the latest of Sierra's role-playing games from the *King's Quest* series, she said: "It's packed full of interesting animations, but above all, it makes you dream." Hmmm, bit deep, that. Maybe I'll have to dig out my copy of the game because these hot summer nights are jolly hard to sleep through.

7 Captive

Released November 1990

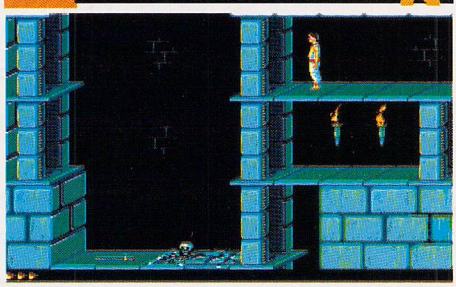


£24.99 ***STF* 16: 93%**
Mindscape **☎ 0444 831545**

"It's better than *Dungeon Master,"* reckons Paul, decisively. Which isn't a shock to any of the *ST FORMAT* team – we all found this game to be a scintillating match of science fiction hokum and fantasy role playing. Combine this with an entertaining bundle of puzzles and you have a scorcher of a game. Paul likes the game because he feels that it demands more of your intelligence than most of the role-players, whereas Christian particularly liked the detailed and well-drawn techno-monsters which pounce on you just when you least expect it (kind of like British Gas meter-people, really).

8 Prince of Persia

Released January 1991



£24.99 ***STF* 19: 90%**
Domark **☎ 081 780 2222**

Here's a game which the whole team agreed was stunning. The exemplary animation is what sets *Prince of Persia* apart from the run-of-the-mill platform game. It's so good *STF* did an animation special on it back in issue 21. Christian says of the game: "We did a double-take the first time we saw the animation. The programmer managed to get a tremendous feeling of fluidity to the movement." We couldn't agree more. Nobody in the office had seen such fluid movement since the Editor got cornered by the local Hare (hare hare) Krishna (Krishna Krishna) devotees after a long session at the pub.

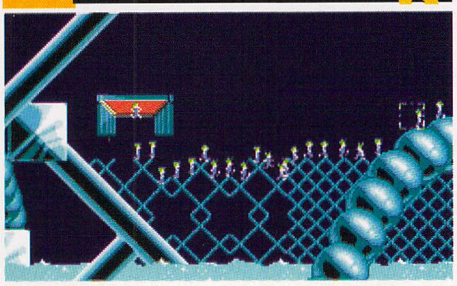
Paris-based software house Delphine reveal which games keep them away from producing FORMAT Gold winners like Operation Stealth and their forthcoming 1920s adventure Cruise for a Corpse. How many of these have you got?

sound. In fact, the music from *Future Wars* was actually released on CD!

Paul Cuissit is the Chief Programmer on the team. He explained that Delphine began by creating arcade games because of a desire for commercial success. Accordingly the team produced *Bio Challenge* and *Castle Warrior*. However, the allure of the graphic adventure has proved to be very popular with ST game-players the world over, and the team enjoy creating games which look good and offer lasting interest as well. Paul told *ST FORMAT:* "We haven't abandoned the arcade game format. There are some new arcade games on the way." He wouldn't say exactly what these games would be like – we'll just have to wait and see. ***stf***

4 Lemmings

Released May 1991

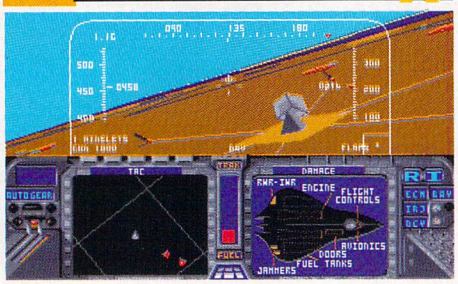


£25.99 ***STF* 24: 94%**
Psygnosis ☎ **051 709 5755**

One of the few completely original games to be released for the ST, *Lemmings* borrows from no-one. It's simple, devious and brilliant fun. The objective is to save the lives of your little lemmings by building bridges, burrowing down or climbing – all in an attempt to get through a rough terrain in one piece. It's simple but highly effective. Christian enjoyed the little Lemming sprites' movements, particularly the movements before one of them explodes when they put their hands to their heads and shake up and down before blasting into the air – malicious swine! Don't miss this fiendishly addictive chart-topper.

5 F-19 Stealth Fighter

Released June 1990



£29.99 ***STF* 12: 96%**
Microprose ☎ **00666 504326**

"Phewotascorcher" was the cry that our very own Neil Jackson shrieked when he played this demon flight simulator for the first time – and who can blame him? Christian (he's Delphine's graphic artist) agrees with Neil, though he's more likely to have shrieked something like "Oomondeiu." He feels it's the fast, colourful graphics which make *F-19* such a scorcher and particularly likes the out-of-plane views. The large number of polygons used in the detailed 3D landscape make it look highly realistic. Combine this with the fast running speed and you have a highly absorbing flight simulator.

9 Rick Dangerous 2

Released October 1990



£24.99 ***STF* 15: 86%**
Microprose ☎ **0666 504326**

Everyone on the planet found the first *Rick Dangerous* a blimmin' hard platform game, so Microprose went out of their way to make the sequel a playable laughette. Christian thought the game was hilarious, particularly the bit of animation where Rick goes flying right out of the screen because he's just been sprunged up the bum with an electric shock. He also enjoys the slick control method which enables you to roll grenades onto unsuspecting monsters. Four levels of progressively difficult puzzles, each level set in its own colourful and detailed landscape, make this a platformer well worth playing.

10 Dungeon Master

Released March 1987



£24.95 ***STF:* 93%**
FTL/Mirrorsoft ☎ **071 928 1454**

Here's an adventure game which led to the inclusion of a new phrase in the dictionary: "Use the fireball potion. There's a troop of bloody skeletons behind that pink blob with teeth." Patricia reckons that this game's "thrilling. You never know what's around the next corner." We can't argue with that sentiment. This classic maze adventure quickly became the standard by which all other role-playing games are measured, and despite its age it's still a hit. The release of *Chaos Strikes Back* two years ago gave new life to the game because it enabled you to take your characters off on an exploration of new land.

11 Future Wars **Released November 89**
£24.95 ***STF* 5: 87%**
Palace ☎ **071 278 0751**

This was Delphine's first adventure game and it established them as a force to be reckoned with. Paul still has a soft spot for the game, mainly because it *was* their first. The game oozed with the snazzy graphics Delphine are now famed for – for a treat check out the window cleaning scene.

12 F-29 Retaliator **Released July 90**
£24.99 ***STF* 13: 76%**
Ocean ☎ **061 832 6633**

Not a terribly realistic simulator, but good fun all the same. *F-29* attempted to pull shoot-'em-up fans into the world of the flight sim by making the genre decidely simplistic. "The 3D graphics are superb – fast and well shaded," said Christian.

13 Fighter Bomber **Released January 90**
Activision ***STF:* 73%**
£24.99 ☎ **010 33 1 49 10 9995**

Lawks, not another flight sim., guys! Get with the program! Paul's quite indifferent to the speed problems of this one. "It is a little slow but that isn't a problem." He feels that the gameplay still stands out above the rest.

14 Pro Tennis Tour **Released November 89**
£19.95 ***STF* 5: 68%**
Ubisoft ☎ **0252 860299**

Cross court smashes and disguised lobs – *Pro Tennis* was one of the best tennis games. Delphine enjoy playing the game for fun, particularly the doubles in which you can indulge in some greedy tactics. One to annoy your friends with.

15 Lotus Esprit Turbo Challenge **December 90**
£19.99 ***STF* 18: 86%**
Gremlin Graphics ☎ **0742 753423**

Paul loved the realism of this racer. "You could tell they did their homework," says Paul. "It really felt like you were driving a Lotus." Apart of course from the fact that the babes/dudes don't flip for you when you're driving a simulator.

16 Kings Quest 2 **Released February 88**
£34.95 ***STF:* 72%**
Sierra ☎ **0734 303171**

Another of Patricia's choices, the second in the *Kings Quest* series continues Graham's saga as the King of the land of Daventry. She believes the gameplay was a tad slow, but the graphics made up for it – that and its superb storyline.

17 Operation Stealth
Released September 90
£24.99 ***STF* 15: 93%**
Delphine/US Gold ☎ **021 625 3388**

Delphine's foray into the secret agent world was an instant classic. Christian enjoyed piecing the graphics together; everyone else loved looking at them. This endures as the best graphic adventure yet – but wait for *Cruise for a Corpse.*

18 Midwinter **Released March 90**
£29.99 ***STF* 9: 96%**
Microprose ☎ **0666 504326**

This was an ST stormer. Thierry loved the absorbing plot most. He found that you really began to sympathise with the characters.

19 Falcon **Released May 88**
£24.99 ***STF:* 83%**
Mirrorsoft ☎ **071 928 1454**

One of the first ST flight sims., *Falcon* had some innovative touches such as a completely unintelligible control tower voice. Out-of-plane views, especially the satellite view, were great.

20 Loom **Released October 90**
£29.99 ***STF* 16: 81%**
Lucasfilm/US Gold ☎ **021 625 3388**

Brilliant graphics and a wry sense of humour made *Loom* a hit, but the game takes only a day or two to complete, so it's best for novice adventurers.

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Gamebusters

Sorry to disappoint you, but there are no tips at all in this month's Gamebusters. No cheat modes, no hints, no level codes. Well, there are a few. Quite a lot, actually. All right, so we lied. There are hundreds – well, not hundreds exactly... (wibbles off into the distance)

First, some more devious and devilish cheats from the Gamebusting maestro himself, **John Barnsley** of **Staffordshire**.

This month he guides us through a glut of games from M to Z.

MANCHESTER UNITED

Krisalis

During your romp around the field, press the *left* mouse button, activating the two-player mode. The ball can be taken around the opposition easily because no-one is controlling them.

MARBLE MAGIC

Sphinx

The ten level codes are: 1 = ADVERTISER, 2 = EVERYWHERE, 3 =TOOTHPASTE, 4 = CONNECTION, 5 = CLEVERNESS, 6 = COPYWRITER, 7 = TELEVISION, 8 = CIGARETTES, 9 = COMPLICATE and 10 = IMPOSSIBLE.

MEAN STREETS

Accolade

The Navigation Codes:

SONNY FLETCHER <NC 5170>
DAVID POPE <NC 6211>
MAURICE GRIBBLE <NC 8231>
GIDEON ENTERPRISES, FRANK SCHIMMING <NC 4650>
JOHN KLAUSE <NC 7012>
J.SAINT GIDEON <NC 3819>
SANDRA LARSEN <NC 4599>
BASH DAGOT <NC 4657>
BLAZE WEINER <NC 1715>
SMILEY MONROE <NC 3614>
AARON STERNWOOD <NC 0439>
CARL LINSKEY'S OFFICE, USF <NC 4663>
WANDA PECK <NC 4621>
LARRY HAMMOND <NC 4935>
RON MEAT<NC 4525>
TOM GRIFFITH <NC 4590>
JEROME MILBOURNE <NC 4623>
ED BRADLEY <NC 7312>
ARNOLD DWEEB <NC 4610>
RON MORGAN (Search) <NC 1998>
JORGE VALDEZ <NC 4931>
BRENDA PERRY <NC 4577>
BOSWORTH CLARK (Search) <NC 9932>
DELLA LANG <NC 2111>
SAM JONES <NC 0021>
PETER DULL <NC 4674>
DIAMOND MINE, MAP <NC 1700>
HOTEL, MATCHBOOK <NC 5162>
BAKERSFIELD <NC 1710>
BEACH HOUSE (Search) <NC 6470>
GREG CALL <NC 4753>
CARL LINSKEY'S HOME (Search) <NC 4660>
CARL LINSKEY'S LEASED WAREHOUSE (Search) <NC 4675>
CAL DAVIS (Search) <NC 3720>
CALIFORNIA LAB (Search) <NC 8911>
LOLA LOVETOY <NC 4603>
ROBERT KNOTT <NC 0132>
HARRY RICE <NC 1231>
LOS ANGELES, BUS TERMINAL <NC 5194>
LOS ANGELES, MTC OFFICE <NC 5037>
BIG JIM SLATE <NC 4921>
APARTMENT (Search)<NC 4605>
BAZIL MALLORY <NC 2713>
MELBA WIEDBUSH <NC 4122>
STANFORD DEMILE <NC 3199>
MTC MAIN COMPUTER, ALCATRAZ <NC 4550>

The Passwords (for the Passcards) in the game are aparrently chess-related: ORANGE = CHECKMATE, YELLOW = QUEEN, BLUE = BISHOP, GREY = KING, PURPLE = KNIGHT, BLACK = ROCK, RED = STALEMATE, GREEN = PAWN.

● GAMEBUSTERS TIPS EXTRA ● GAMEBUSTERS TIPS EXTRA ●

ARKANOID

Imagine

While the game is booting, try pressing <Caps Lock> and then typing in DEATHSTAR.

When the game is running, press S to go through the screens to see which one you wish to start on.

For an extra 33 levels, hit F3 for a one-player game and F4 for a two-player game (instead of F1 and F2).

AXEL'S MAGIC HAMMER

Gremlin

To use a continue game option, take the disk out and press "Fire" to start when the continue message is displayed. All the blocks destroyed in the last game are still missing in the new one.

BARBARIAN

Palace

In the one-player game, roll into the middle of the screen, kneel down and then swipe at your opponent's legs. Because of a strange quirk in the program, the other warrior can't retaliate and you should be able to get the evil wizard with ease.

BLACK TIGER

US Gold

When prompted to insert Disk 2, insert a blank disk and no baddies are loaded.

CHAOS STRIKES BACK

Mirrorsoft

To get a set of strong characters, copy the MINI.DAT file on the Utility Disk onto a blank disk. Rename it CSBGAME.DAT and load it into *Chaos Strikes Back* as your saved game

CHUBBY GRISTLE

Grand Slam

When the title screen appears, type in BUUURRP for infinite lives.

CONTINENTAL CIRCUS

Virgin/Mastertronic

For a superfast start, follow this start procedure, sent in by a **Mr N Mansell** (nah, couldn't be...). First, when the red light flashes, press up on the joystick. When the second red light comes on, release the joystick. When the green light finally flashes – push the joystick up again and go!

DARKSIDE

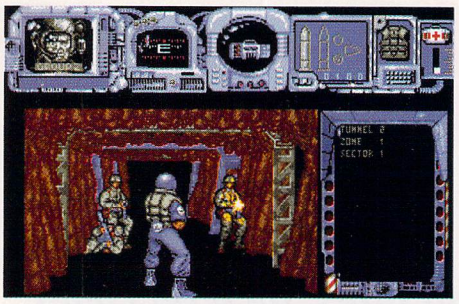
Incentive

Press the 2 and 8 keys along with the "Fire" button to see digitised pictures by the programmers of the game!

DOGS OF WAR

Elite

Feeling too tired to face even an Editor's Three-Legged Dog? While playing the game, type in the name TIMBO and then press the F5 key. You should find that the game's sprite detection



■ **A day in the life of *Narco Police:* "Halt, or I'll shoot! Oh sorry – I have. Didn't mean to do that. Not quite used to these new models, y'see. Er, Dave, can you tell me how to put the safety catch on again? I can't hear you, Dave. Can you stop moaning in pain?"**

NARC
Ocean

Go up to the dustbins, crouch and continuously fire at them for about 11 seconds. Now walk into them for infinite lives.

NARCO POLICE
Dynamic

Type these words while strolling the tunnels:
ABRIR = Open all doors
NOENEMIG = All enemies will disappear
COMENZAR = Brings 'em back!
BLAST = Smart bomb
MUNICON = Ammo
NOAMET Z... = No machine guns (Number of dots = zone number)
NOCAM Z... = No cameras (Number of dots = zone number)

NETHERWORLD
Level 9

Play until you are able to get your name on to the high-score table. Type in UxZ158 for infinite lives.

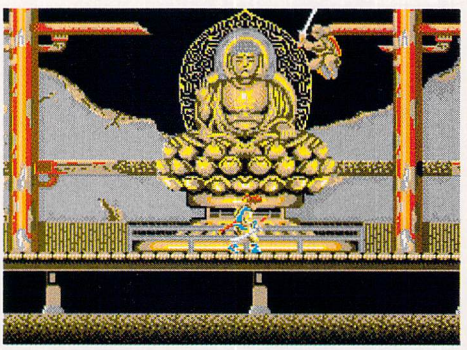
NEVERMIND
Psygnosis

The passwords for each level are:
LEVEL 0 = MMMRHM
LEVEL 1 = AMMRHA
LEVEL 2 = HMMRHH
LEVEL 3 = VMMRHV
LEVEL 4 = PMMRHP
LEVEL 5 = GMMRHG
LEVEL 6 = IMMRHI
LEVEL 7 = RMMRHR
LEVEL 8 = MAMRHW
LEVEL 9 = AAMRHN
LEVEL 10 = HAMRHZ
LEVEL 11 = VAMRHT
LEVEL 12 = HHMWHH
LEVEL 13 = GAMRHQ
LEVEL 14 = IAMRHB
LEVEL 15 = RAMRHF
LEVEL 16 = MHMWHM
LEVEL 17 = AHMWHA
LEVEL 18 = HHMWHJ
LEVEL 19 = VHMWHV
LEVEL 20 = PHMWHP
LEVEL 21 = GHMWHG
LEVEL 22 = IHMWHI
LEVEL 23 = RHMWHR
LEVEL 24 = MVMWHW
LEVEL 25 = AVMWHN

NINJA SPIRIT
Activision

Press F9 to pause the game. Now press <Caps Lock> and hold down both <Control> and <Shift> keys. The game restarts and you get infinite lives. Also, the collision detection facility is now switched off (but you must be sure you press the keys in the correct order).

You can also type in NO HUNS AT HAMPDEN AND NO SKOL AT IBROX. Then, as soon as the game starts, a cheat mode is activated. Press any of the keys 0 to 9 and you're taken to the corresponding level.



■ **A day in the life of a *Ninja Spirit:* "Being a Ninja mega-star is just so totally ravishing, dear, but people get so jealous! Just this morning someone stole my mirror and I've felt all quesy ever since. Oh, thank heavens, Raymond, it's you. Quick, I need a super-fast trim around the edges. Not too much off this side, though, if you don't mind, there's a dear..."**

OOPS UP
The Software Business

Some level codes are:

DK51 PW04	IFE50 EB01
Q058 MC90	0F4 ER7E
D04G TRP2	DK39 A234
WAQD FUKO	467H C5J0
DK49 JU68	VE96 4799
XPE4 R2T7	S04L

PETER BEARDSLEY'S SOCCER
Grandslam

When you get the ball, run with it while continually tapping the "Fire" button and no-one can take it from you.

POPULOUS
Electronic Arts

Try playing the world accessed by SHISODING. If that's not good enough then how about Biloord?

QUADRALIEN
Logotron

Here are the level codes: Level 2 = 170961, Level 3 = 010655 and Core = 610169.

RAMBO 3
Ocean

Get on the high-score table and type RENEGADE. Then press keys 1, 2 or 3 to access the level of your choice.

RETURN TO GENESIS
Firebird

At any time, type WASP.ASM to activate the cheat mode. This gives you the following new functions: F5 to make your ship indestructible, F4 to change monitor frequency and <Control> to display program version messages. Other keys also have an effect. End the game by selecting scientist FESTUS and destroy your ship by pressing the Spacebar. You can then enter your name on the permanent high-score table.

● GAMEBUSTERS TIPS EXTRA ● GAMEBUSTERS TIPS EXTRA ●

routine is now switched off, enabling you to wipe out entire armies single-handedly!

DRIVIN' FORCE
Digital Magic

When you are on the main menu, click with the mouse on the dots of the two "i's" of the title "Drivin' Force" at the top of the screen. You should now find that when you race your car you cannot leave the track!

DYTER-07
Reline

While the game is loading, type in GIBB on the loading screen. When playing you can press W for extra weapons and S to top up your shield.

GOLDRUNNER
Microdeal

Press F4 and only three aliens appear. You can create strange effects by pressing F10. Type EASYMODE on the high-score table, and when play begins press F9 to skip the present level. This also deactivates bomb collision detection – press F8 to disable. Also, start up and type ATARI to go to the first bonus screen. 1 gets you to the bonus round; 0 gets you to the next level.

GRAVITY FORCE
Lankhor

Instead of the normal level passwords, enter WARPxx, where xx is the number of the level you want to go to (WARP01 and so on).

HYBRIS
Discovery/Softek

Type COMMANDER at any time, then press the "Fire" button to activate the cheat mode. Now press the following keys: F10 = makes the ship invincible, F9 = to skip to the next level, F2 to F6 = for different weapon stages and F10 again = to turn off the cheat mode.

KING'S QUEST 1 – 3
Sierra On-Line

Hit <Alt>-D for special mode. After the version number is shown, type "tp" to go to any room, or "get all" (plus object number) to get any object.

MEGATRAVELLER 1
Empire

Here's an easy but extremely tedious way to gain lots of cash for your characters from **Matthew Ward** of **Dorset.**

Fill a blank disk with rich Scouts who have a bank balance of over 100,000 credits (saved characters, that is, not the real thing – they might object). Now load the game with your current party disk (not the one with the Scouts on it).

Go to a starport with both Recruit and Account facilities and transfer all funds into individual accounts, except for the person you least like – leave him nothing. Now leave the starport, break the party, kill that character and return safely to the starport. Using the new disk, recruit



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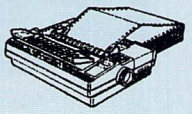
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ROCK 'N' ROLL
Rainbow Arts

Instead of typing in your own name in the high-score table, enter RAINBOW ARTS. Then type in the level you wish to start on, followed by XX, followed by four numbers that add up to the level number, again followed by XX and finally the level you want to start on reversed.

If you wanted Level 9, for instance, type 09xx2223xx90. Also, type in COUNTRY on the high-score table to be given a jukebox menu for the in-game music.

ROLLING THUNDER
US Gold

On the title screen, type JIMBBBY and press <Return>. Just above the controls, on the scrolling message, the words "Cheat Mode" appear. Simply start play and you should find you have infinite health and lives.

ROTOR
Arcana

To get to all the different missions, type GAG, SLY or AWE at any time.

SAINT DRAGON
Storm

To get infinite lives hold down the left mouse button and the "Fire" button until the game loads. Alternatively, press <Caps Lock> during play, type in DECAFFEINATED and then hit <Return>.

SCORPION
Digital Magic

Obtain a high score and type IMPORTLIGAT in the high-score table to obtain ten lives.

SDI
Electric Dreams

If you are proficient at the high-score table game, clear all of the asteroids and type ALERIC into the high-score table. Now you can change between levels by pressing the relevant Function key.

SAVAGE
Firebird

The passwords for levels two and three are SABATTA and PORSCHE.

SEVEN GATES OF JAMBALA
Grandslam

During the presentation screen, type YICKE YACKE HCHNERKACKE and keep the left <Shift> and 1 key depressed. First release the 1 key and then the <Shift> key. The title should now be blue – press keys 1 to 7 to select levels and use keys F1 to F5 to choose weapons. There are several other hidden options – G for gold for instance.

SHACKLED
US Gold

Complete the game thus while on Level 1. First, the person at the top of the list, transfer all his money into someone else's account and kill him. Recruit the next person and repeat the cycle until all the characters on the disk are used.

Save the game and reload. Repeat the whole thing for as long as you want or until you crack up. Finally recruit the original character and you're left with a full party and millions of credits. Dead easy, innit?

MiG-29 FULCRUM
Domark

A big hand please for **Markus Thorsen,** all the way from **Norway,** who's managed to complete all five scenarios in this game.

1. Blue Seasprite
Fly to the Harrier base, destroy the hangars and then all the Harriers. Fly over the submarine at low level and destroy it. If there are any Harriers left, shoot them down. Return to base.

2. Yellow Dragon
Fly to the nearest Chinese runway and destroy the hangar. Destroy the Shenyang fighters. Land on the Chinese runway for refuelling and rearming. Take off and fly to the second Chinese runway to destroy the hangars. Destroy the Shenyangs and land on the runway. Take off and fly to the Great Wall and destroy the four tanks. Return to base.

3. White Pegasus
Fly to the island and destroy the refinery. Fly to the oil rig, destroy it and return to base. If you like you can destroy all the other ships and rigs.

4. Red Witch
Fly to the bridge and destroy the SAM site and the Flak gun. Destroy all the SAMs and Flaks in the area so you can continue safely. Destroy all enemy buildings and vehicles. Return to base.

5. Desert Strike
Fly to advance base and destroy the hangar, then destroy the Mirages. Destroy the Flaks and land on the advance base for refuelling and rearming. Take off and fly to the second enemy airbase situated northeast of the SAM area. Destroy the hangar and enemy fighters, then land on the runway. Fly to the SAM area, blow up all the SAMs and the nuclear facility. Destroy the bridge, desert fort, truck convoy, truck base and the fuel dump. Return to the base.

General advice:
1. Complete the training programme before you attempt any solo missions.
2. If you mess up a mission, don't give up but try it again and learn from your mistakes.
3. You are only able to fire Kerrys at primary targets. You must destroy secondary targets by unguided rockets or cannon fire.
4. Avoid SAMs by flying above 10,000 metres or below 100 metres.
5. Avoid enemy aircraft by flying at high altitude and at high speed.
6. It's wise to destroy all enemy defences before you continue the mission.
7. Harriers, Shenyangs and Mirages need only one missile hit to down; MiG-29s need two.
8. When firing S-240s, accurate aiming is essential to hit a target.

● GAMEBUSTERS TIPS EXTRA ● GAMEBUSTERS TIPS EXTRA ●



■ **"'Fraid I don't have starrghrite just now, but I do have this very nice nearly new Cornish pasty. Cheese and onion it is, and only a bit dirty." As recommended by Derek Hatton (probably) in *MegaTraveller 1***

NIGHT SHIFT
Lucasfilm

All this from **D Evans** of **Gwent.** Enter your name as MPICKLE in the high-score table. Now you can still go onto the next shift even if you don't finish the previous one. In addition, here are the level codes for each shift.

2: CHERRY, BANANA, BANANA, LEMON
3: BANANA, CHERRY, PINEAPPLE, PLUM
4: PINEAPPLE, LEMON, PINEAPPLE, PINEAPPLE
5: PINEAPPLE, PINEAPPLE, LEMON, CHERRY
6: CHERRY, PLUM, PLUM, PINEAPPLE
7: CHERRY, PINEAPPLE, LEMON, BANANA
8: PINEAPPLE, BANANA, PINEAPPLE, CHERRY
9: PINEAPPLE, LEMON, LEMON, CHERRY
10: LEMON, BANANA, PLUM, PLUM
11: BANANA, PINEAPPLE, CHERRY, PLUM
12: CHERRY, PLUM, BANANA, PLUM
13: PLUM, CHERRY, BANANA, PINEAPPLE
14: PINEAPPLE, CHERRY, PLUM, BANANA
15: PLUM, PLUM, PINEAPPLE, PINEAPPLE
16: BANANA, BANANA, PINEAPPLE, BANANA
17: BANANA, PLUM, CHERRY, PLUM
18: PLUM, LEMON, LEMON, PLUM
19: LEMON, PINEAPPLE, CHERRY, PLUM
20: CHERRY, PINEAPPLE, PINEAPPLE, CHERRY
21: LEMON, CHERRY, PINEAPPLE, PINEAPPLE
22: PLUM, CHERRY, LEMON, BANANA
23: PLUM, CHERRY, CHERRY, LEMON
24: PLUM, PINEAPPLE, LEMON, LEMON
25: BANANA, PINEAPPLE, PINEAPPLE, LEMON
26: PLUM, CHERRY, CHERRY, BANANA
27: BANANA, CHERRY, LEMON, BANANA
28: PLUM, BANANA, BANANA, PINEAPPLE
29: CHERRY, PLUM, CHERRY, PINEAPPLE
30: CHERRY, CHERRY, BANANA, PLUM

PREDATOR 2
Imageworks

Malcolm Begg of **Aberdeen** has come up with

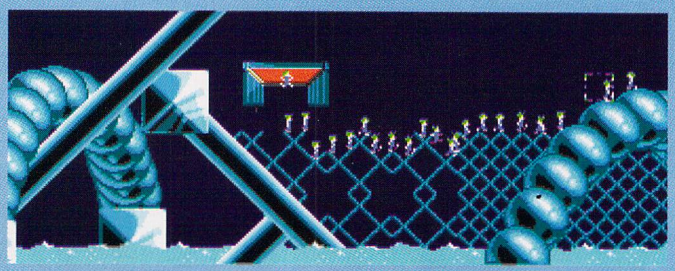
continued on page 93

LEMMINGS

Psygnosis



For his huge efforts with *Lemmings*, Trevor Newton of Cheshire is this month's prizewinner. We brought you Trevor's codes for the first two stages of the game – Fun and Tricky – last issue. Now here are the codes for the last two stages, Taxing and Mayhem.



TAXING

LEVEL	CODE	% TO SAVE	TIME	NAME
01	MFMCGKLNFO	99	4	If at first you don't succeed
02	GMCOKLMOFY	80	5	Watch out, there's traps about
03	MCANMMFPFO	100	2	Heaven can wait (we hope!!)
04	CINOMGMQFK	75	7	Lend a helping hand...
05	GEKKNMJBGJ	75	5	The Prison!
06	KJILDLGCGU	60	3	Compression Method 1
07	NHNLJGCDGY	98	3	Every Lemming for himself!!
08	ILDLGMOEGN	100	4	The Art Gallery
09	LDLGCJOFGV	100	4	Perseverance
10	ENGIJNLGGO	100	5	Izzie wizzie lemmings get busy
11	LGANOLDHGJ	100	4	The ascending pillar scenario
12	GKNOLDLIGU	80	5	Livin' on the Edge
13	GAJIMMHJGX	99	6	Upsidedown World
14	OKHMDNGKGT	95	8	Hunt the Nessy...
15	OIMELGALGK	80	6	What an AWESOME level
16	HMDLGKOMGT	97	3	Mary Poppins' land
17	MELGCKLNGN	90	7	X marks the spot
18	DLGIJOMOGV	86	5	Tribute to M. C. Escher
19	LGENMMDPGU	91	2	Bomboozal
20	GKNNOLHQGS	88	5	Walk the web rope
21	GGKHNNHBHY	100	2	Feel the heat!
22	KJJLFNGCHK	100	3	Come on over to my place
23	NJLGNGADHW	95	5	King of the castle
24	KNOHGOOEHL	99	3	Take a running jump...
25	LFNGCJNFHJ	90	4	Follow the leader...
26	GNGIJLLGHP	99	5	Triple Trouble
27	HFANLLFHHU	60	5	Call in the bomb squad
28	FINLLFHIHN	70	5	POOR WEE CREATURES!
29	FAJHMFHJHP	95	4	How do I dig up the way?
30	IJHMFHFKHG	100	3	We all fall down



MAYHEM

LEVEL	CODE	% TO SAVE	TIME	NAME
01	NJMNLFELHX	90	8	Steel Works
02	HMFJFINMHQ	90	6	The Boiler Room
03	MFHFAJLNHX	100	1	It's hero time!
04	FHFIJLMOHQ	100	1	The Crossroads
05	HFANLMFPHN	75	5	Down, along, up. In that order
06	FINLMFHQHW	100	4	One way or another
07	FAJHLDIBIW	90	5	Poles apart
08	IJHLDIFCIP	90	5	Last one out is a rotten egg!
09	NHLDIFADIN	99	4	Curse of the Pharoahs
10	HLDIFINEIV	66	5	Pillars of Hercules
11	LDIFAJLFIO	100	3	We all fall down
12	DIFIJLLGIX	100	4	The Far Side
13	MGCNNLEHIO	100	2	The Great Lemming Caper
14	FINLLDIIIN	93	5	Pea Soup
15	FAJHMDIJIP	96	2	The Fast Food Kitchen...
16	IJHMEMGKIO	100	1	Just a minuete...
17	NHMDIFALIV	87	4	Stepping Stones
18	HMDIFINMIO	90	9	And then there were four...
19	MDIFAJLNIX	92	5	Time to get up!
20	DIFIJLMOIQ	100	5	No added colours or Lemmings
21	IFANLMDPIN	100	5	With a twist of Lemming please
22	FINLMDIQIW	85	5	A Beastll of a level
23	FAJHLFIBJJ	80	9	Going up...
24	IJHLFIFCJS	100	1	All or Nothing
25	NHLFIFADJP	90	5	Have a nice day!
26	HLFIFINEJY	90	8	The Steel Mines of Kessel
27	LFIFAJLFJR	100	1	Just a Minute (Part Two)
28	FIFIJLLGJK	100	7	Mind the Step...
29	IFANLLFHKX	80	5	Save Me
30	FINLLFIIJQ	75	9	Rendezvous at the Mountain

■ You too can save the cute little lemms. But one heartfelt plea: *please* don't send in any more *Lemmings* level codes – we've had almost three rainforests' worth already! Anything else is, of course, most welcome.

"PLEASE, SIR, I WANT SOME MORE"

You don't have to read Dickens to know that (bad quotes aside) we at *ST FORMAT* need your hints, hips, peaks, chokes – *all* those silly words that even Uriah Heep would tremble at. We want them all – and you don't have to have the hands of a wet fish to send them in! If you've got a tip, a cheat, a short cut, an infinite lives poke, a password, a map – anything at all – we want it! That way you can reach well over 70,000 fellow ST owners (and you don't have to get within 20 feet of a leather-bound book). What's more, there's *FORMAT*'s monthly prize of £50 for the best tip(s). Not even Charles Dickens offers you so much!

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Please complete this form and send it, along with your tip, to: *Gamebusters*, *ST FORMAT*, 30 Monmouth Street, Bath BA1 2BW.

➤ collect the key, then move into a secret passage below the key. Although your character is not visible, he can still move, so move as far down and right as possible.

Now move up to reach a small room. In it there is a locked door. Use the key and go up into the next room, where there is another door. Walk through to complete the game. Also, press the + key to advance a level.

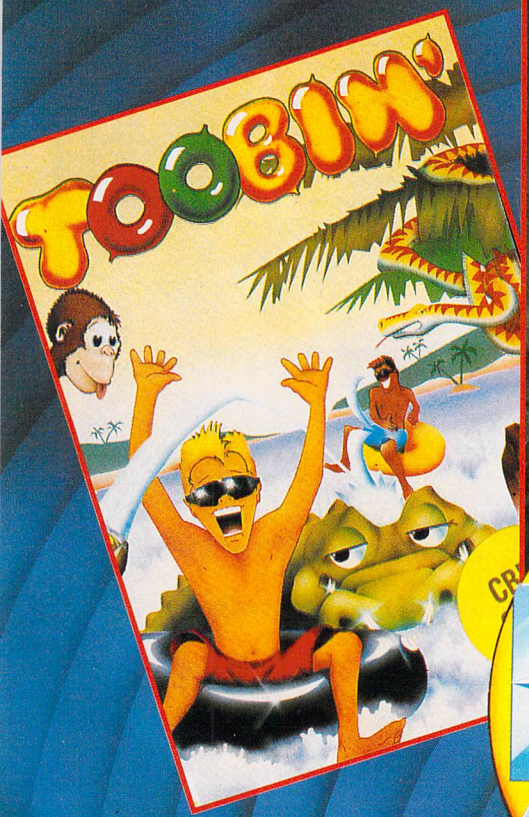
SIDEWINDER

Mastertronic

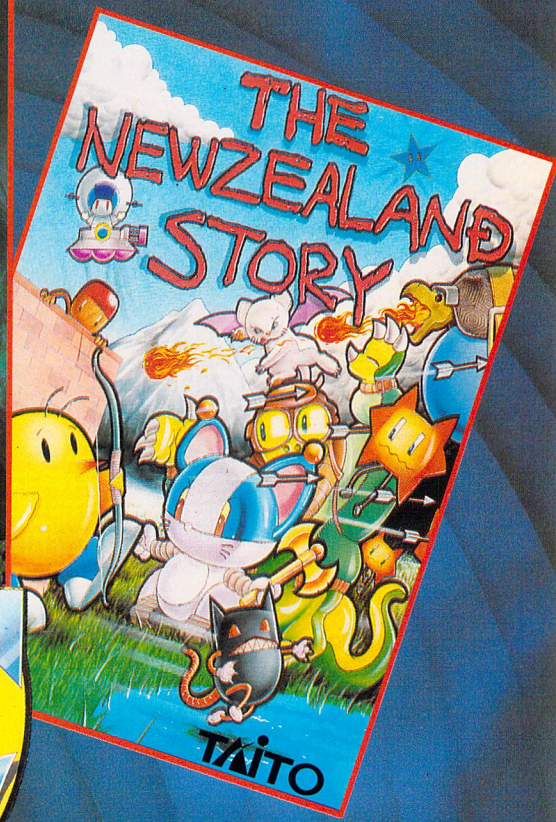
You should make a back-up before trying this one. Load Disk 2 and look at the directory to find the game editor. Press any Function key from F1 to F6 to select the level you wish to edit. You can now pull any nasties out of the game.

Now use the joystick to move the two lines to the right piece, then move it to where you want it to go. Save any levels by holding down both ➤

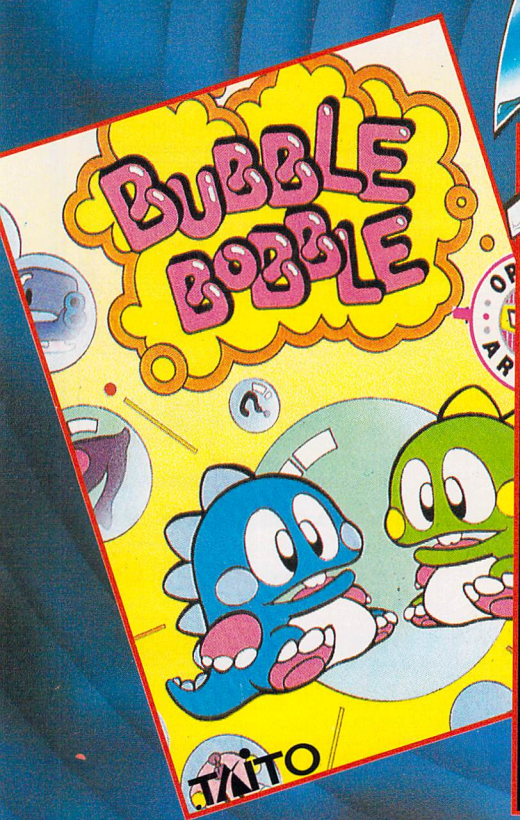
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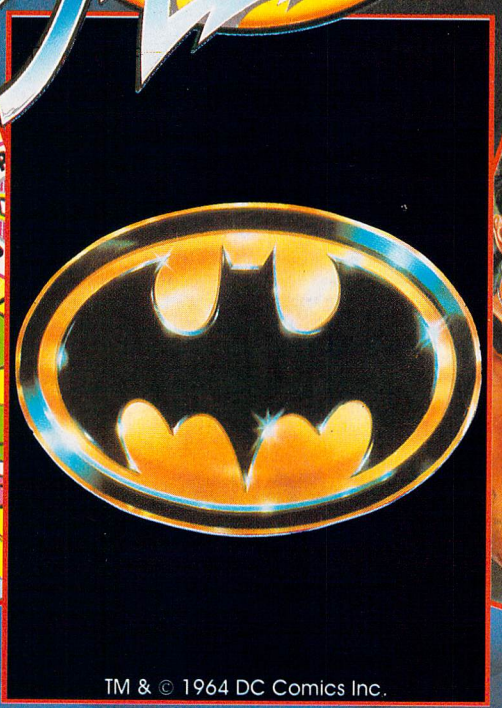


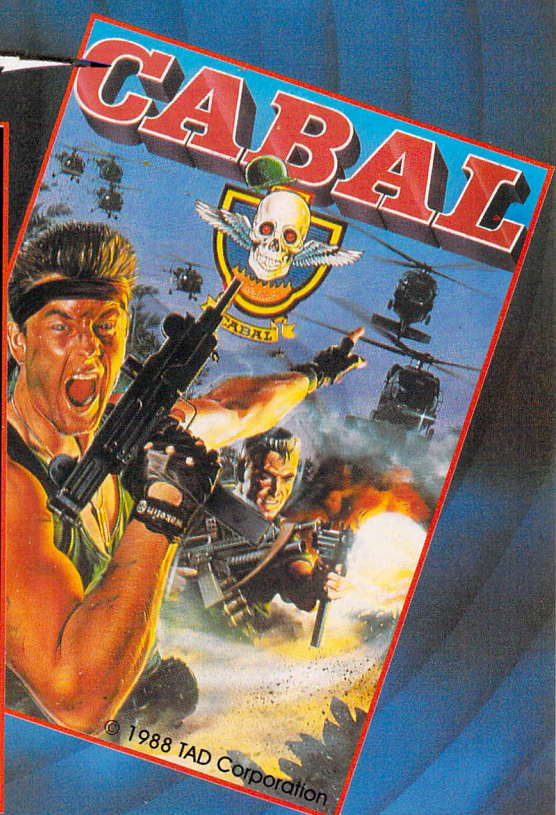




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Still a very fast, non-GEM wp package, but now benefits from pull-down menus and better mouse control (although all current key press commands are still available), holds up to 36 documents in memory, newspaper style columns, new Collins dictionary, new file selector. Still the best wp for using your printer's fonts and effects, rather than waiting for graphic font print outs.

1Mb required

RRP £149.95 OUR PRICE £99.95

PROTEXT version 4.3

For 512K machines, now benefits from the pull-down menus and some other features of version 5.

still only £64.95

PRODATA

Arnor's database has excellent data layout facilities, including a wide range of printer effects, 10 indexes per data file & uses many of Protext's editing commands.

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Package consisting of
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VIDI-CHROME
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PROTAR MONITOR MODEL C141M

PROTAR ARE AN ESTABLISHED GERMAN MANUFACTURER OF HIGH QUALITY ST PERIPHERALS NOW SELLING IN THE UK.

THE C141M MONITOR IS BASED ON THE WELL KNOWN PHILIPS CM8833 BUT COMES COMPLETE WITH AN ST LEAD AND A FULL

ONE YEAR REPLACEMENT GUARANTEE
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FREE COURIER DELIVERY ON ABOVE ITEM.

FREE MOUSE

Yes that's right!!
When you buy either Timeworks DTP or First Word Plus at our normal discounted price get a free GOLDEN IMAGE mouse.
(Normal RRP £24.95)
SO THAT'S

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(Learn about colours and shapes)
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(Learn about the alphabet)
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Letters for you 15.95
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Fun School 2 has 8 programs per disk.
Fun School 2 for 2-6 years 12.95
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quality external second 3.5"
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INCLUDING PSU AND CABLE
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PLUS FIRST WORD PLUS
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mouse buttons at once. ***Warning:*** remember that any modification made to the master disk is permanent and *cannot* be undone.

SPIDERTRONIC
Infogrames

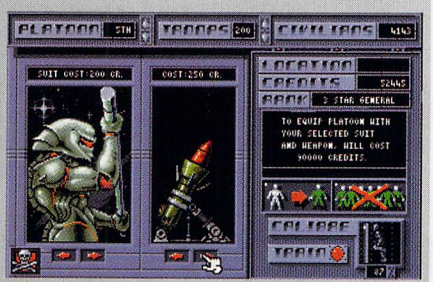
Type CHEAT in the high-score table. Press <Return> and then the Fire button and the screen goes black. A message appears saying "Last game level – GAME.LSO... New game level – ..." Type in GAME.LS and the level you wish to start on. Press <Return> and "Fire" and you begin the game on your selected level.

STORMTROOPER
Creation

Type JAMES CAMERON in the high-score table and the next time you play a yellow squiggle next to the lives indicator appears. It shows that you have several dozen extra lives, but not infinite lives. Should it disappear, press F9 to replenish lives and the squiggle re-appears. Now run through the levels and kill the mad professor, providing you remember to keep pressing F9. Press F10 to remove any barriers.

SUPREMACY
Virgin

Scrap a solar satellite on a planet with no reserves of fuel to gain 30,000 tons of it!



■ **"I don't know, I work hard all day scrubbing your missiles and getting them all nice and clean, then you want to come along and use them. If I know you, you'll get them all covered in blood"**



■ **We interrupt this caption for a newsflash. The Prime Minister has lost his head. It was last seen in the Leighton Buzzard area, wreathed in pretty orange bubbles. The public are advised not to go near it...**

STRIDER 2
US Gold

Type SWIFT at any moment to freeze the time.

SWIV
The Sales Curve

Pause the game and type NCC-1701. Then press <Return> to get infinite lives.

SWITCHBLADE
Gremlin

Type POOKY on the high-score table, then press keys 1 to 5 to access later levels. Click on END to exit the table and continue clicking through the opening screens, still holding down the key. This gives you five different game entry points.

VIGILANTE
US Gold

Build up a high enough score to reach the high-score table and enter your name as POOKY IS MY PAL. Press F1 to increase your lives and F8 to take you to the next level. Alternatively, type GREEN CRYSTAL into the high-score table.

VIZ
Virgin

Type in WHAT A LARGE SET OF BOLLOCKS on the character selection screen and you should hear a funny noise. Hit 1 to 5 on the keyboard and you're magically transported to the corresponding level.

VIRUS
Firebird



■ **You may have destroyed that seeder but you've released a dreaded 40 Point Sign in *Virus!* Deadly they are, full of venom and hatred – killing their victims softly with feeble jokes. Ugh!**

Load the game, press the Spacebar to start, and then hold down <Enter> on the numeric keypad. At the same time press P to enter the pause mode. While keeping the <Enter> key depressed, press the O key to get out of the pause mode. The game seems to continue normally, albeit with a red bar beneath the altitude bar. This tells you that the cheat is active.

Now press C for special effects on/off or D for demo on/off. F refuels you completely, L adds one missile to your stock, N turns cheat off and M gives you extra lives and missiles.

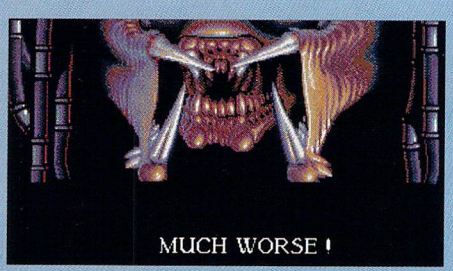
ZANY GOLF
Electronic Arts

How do you find the hidden hole in Level 9 (called "Energy")? Einstein would have puzzled over this for years but not us: to the left of the screen is a mousehole where there are two glowing eyes. When they glow red, putt the ball into the hole and a new screen loads entitled "Mystery." ***stf***

● GAMEBUSTERS TIPS EXTRA ● GAMEBUSTERS TIPS EXTRA ●

continued from page 89

this little slip of a tip. Press P to pause the game and type in YOU'RE ONE UGLY MUTHA (including spaces). Not only do you now have infinite bullets, you can also press F6 to choose any weapon and F8 to move to the next level. Pressing F5 does nothing at all except waste your time, so don't do it.



■ **Much worse, Mr *Predator,* sir! Yes, those incisors have deteriorated since your last visit. You really ought to visit the dentist more often (patronise, creep, slaver). Now please! Put that laser away, sir – the National Health *does* pay for some of the cost**

SHADOW DANCER
US Gold

A Nameless Person from **Notquitesureshire** (sorry, whoever it is) has discovered a cheat mode for this popular beat-'em-up. Simply pause the game and type GIVE ME INFINITES to gain, surprisingly, infinite credits and magic. If you now press X you can skip through the levels too. Ooh!

TOKI
Ocean

Immense frustration! Huge amounts of hassle! Just how do you get the box open? The game's not too easy either, so try this from **Adam Staniforth** and **Matthew Hague** of **Doncaster** to ease those monkey blues. Press <Esc> on the intro sequence before the bloke is monkeyised, type in POORTOKI and then press F1 to F6 for the level you want to reach.

WINGS OF DEATH
Thalion

On the title screen or during the game, type ST FOREVER (with a space). These keys then have the following effects:

F1 – change to insect
F2 – change to bat
F3 – change to eagle
F4 – change to dragon
F5 – change to gryphon
F6 – call up hunter
F7 – call up destroyer
F8 – turn on shield
F9 – turn on auto-fire
F10 – restore energy

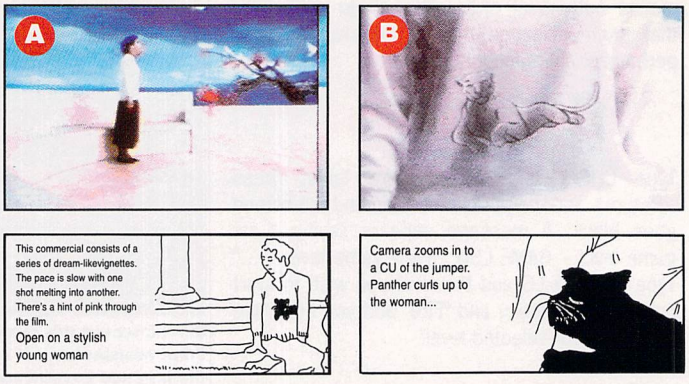
Keys 1-5 on the main keyboard (not the number key pad) affect weapon strength.

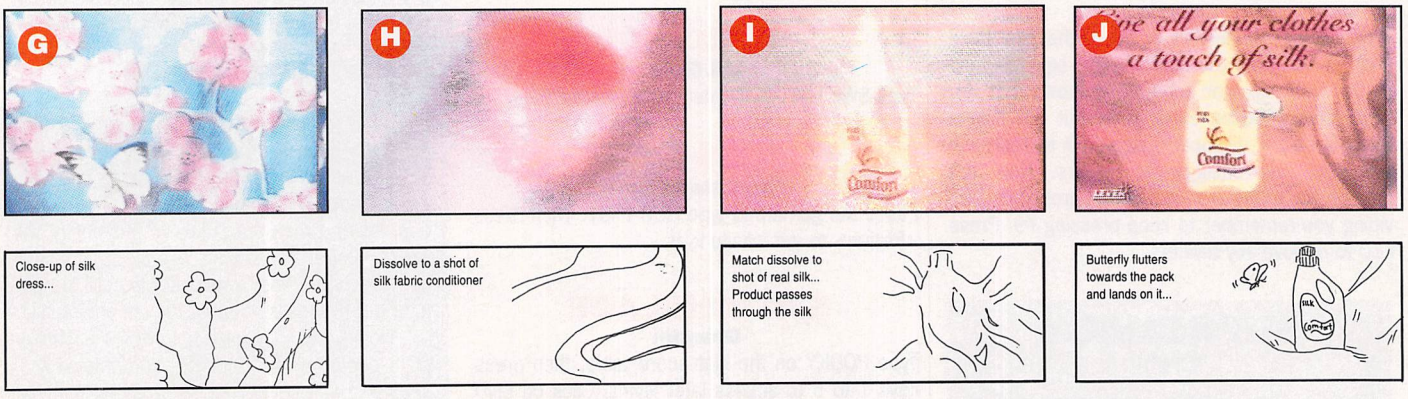
Mike Marchant has used his ST to contribute to many adverts both in the UK, Europe and America. In this advert for Comfort you can see how the original storyboards were turned into a completed advert – which is still running on TV. Mike uses the ST to transform the hand-drawn storyboard into an animated sequence. Using this sequence, the ad agency can decide what changes need to be implemented before getting as far as the filming stage. In this case, you can see that an entire sequence was edited out of the final advert.

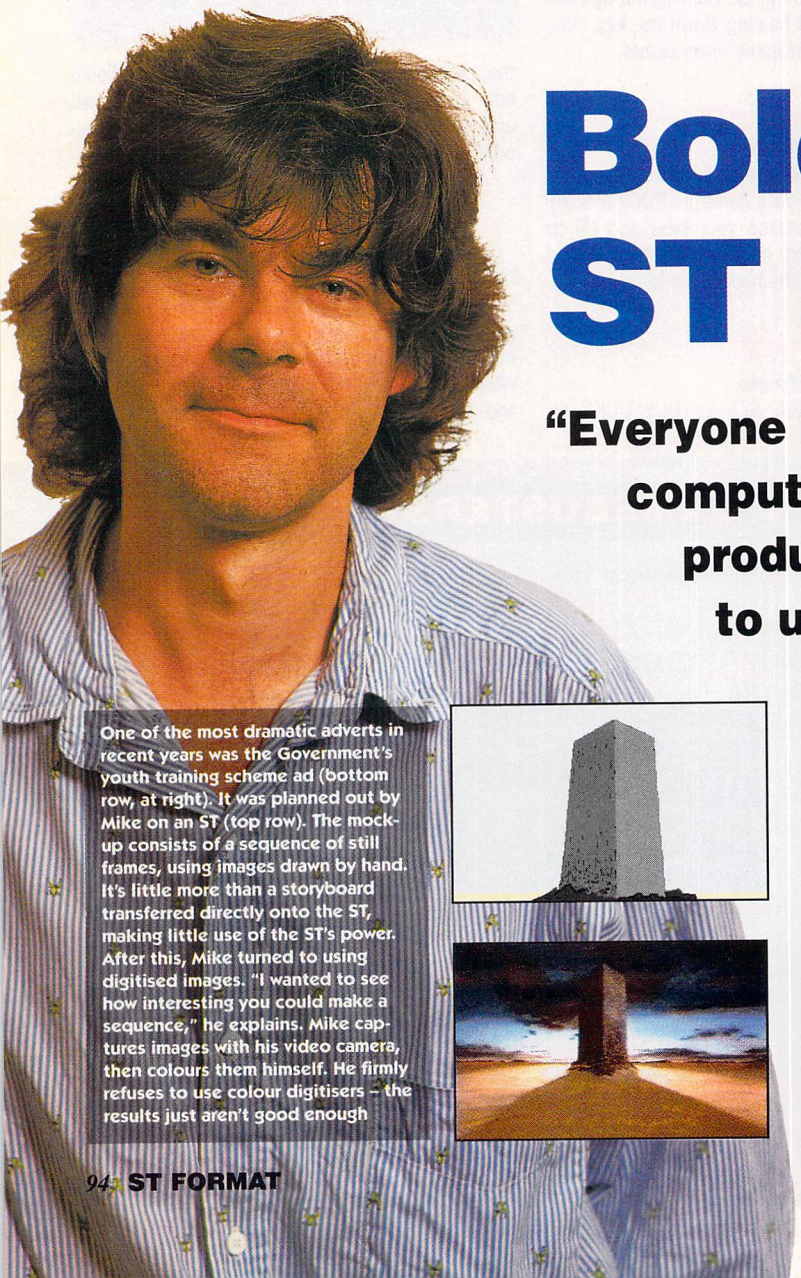
Using *Chronos,* Mike builds up the animation, ensuring that the camera angles are accurate and the timing is correct. The animation for this particular sequence is so long that it only just runs on a 4MByte ST!

The flowers in the ST screens on the right open up and a butterfly dances through them. Compare this to the equivalent storyboard shots where it's difficult to make out what the ad agency want to do. The ST animation is recorded onto video tape and the Director of the advert works from this, secure in the knowledge that everyone involved agrees this is how the final ad should look.

Mike's next project is to apply similar technology to feature films, where he can test out complicated shots before bringing the camera onto the scene

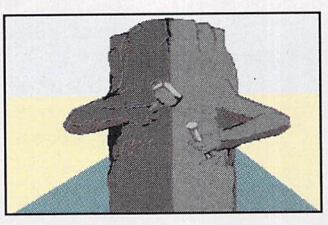


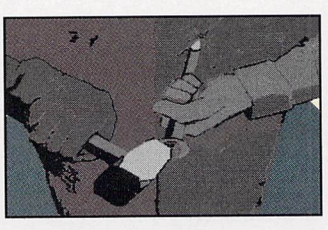




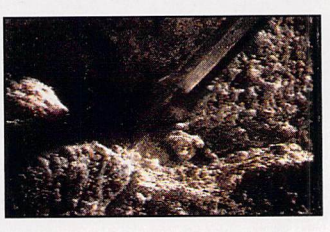
Boldly going ST has gone

"Everyone is thinking about using computers in the area of post-production but I'm the only person to use an ST in pre-production"









One of the most dramatic adverts in recent years was the Government's youth training scheme ad (bottom row, at right). It was planned out by Mike on an ST (top row). The mock-up consists of a sequence of still frames, using images drawn by hand. It's little more than a storyboard transferred directly onto the ST, making little use of the ST's power. After this, Mike turned to using digitised images. "I wanted to see how interesting you could make a sequence," he explains. Mike captures images with his video camera, then colours them himself. He firmly refuses to use colour digitisers – the results just aren't good enough

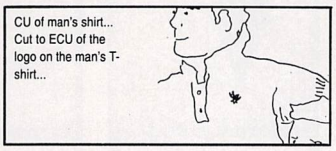


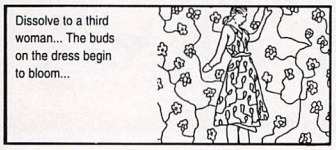


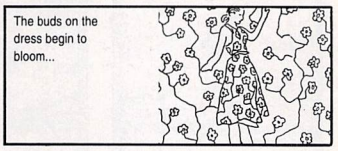




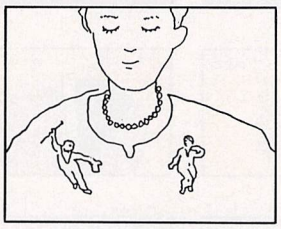






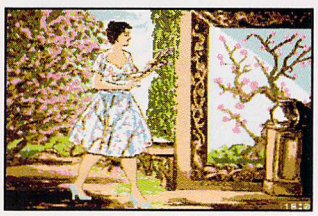


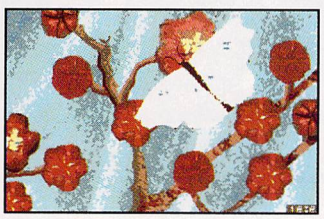
■ To the right is a sequence which appeared in the original storyboard but never made it into the final advert. In the storyboard, the advert dissolves to a second woman (after pic D in the above sequence). We zoom in to her dress and spot a couple of dancers sweeping through the material. For one reason or another (perhaps to reduce the running time of the advert) this strip of Ginger Rogers and Fred Astaire bursting into dance was cut from the final advert

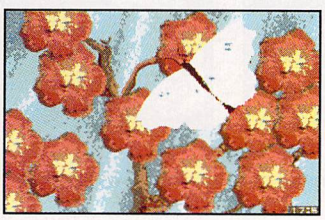












■ After the Ginger Rogers sequence we dissolve to a third woman (pic E in the sequence), zoom in to her dress and watch the buds on it begin to open. Here you can see a sequence of ST screens – these were adapted from the storyboard. The blossoming flowers were created in *Chronos* and are one of Mike's favourite sequences

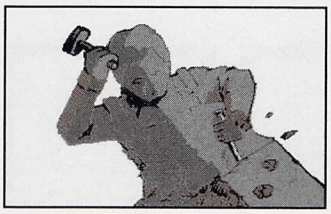
where no before

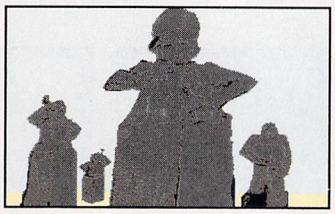
You've gawped at the John Smith's ads, crowed at the Tesco advert and split your sides over the Radion commercial. Now the ST is taking a driving seat in the ad world

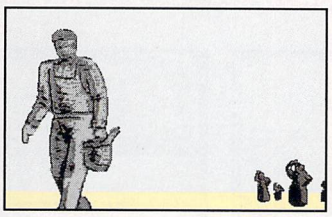
Produce a television commercial which captures the imagination of your viewers and you can make a fortune. Get it wrong and you can wind up in the bankruptcy courts. With a television commercial costing in the region of £200,000 to make and vastly more to get it onto the silver screen, no-one wants to make mistakes. That's where the ST comes into the game.

Using an ST, a 3D sculpting package, various painting utilities and a video camera, Mike Marchant's video company saves the advertising companies thousands. He produces mock-ups of the adverts exactly as they would appear on screen, enabling the ad agencies to make them more effectively before shooting the final film.

Creating an impressive advert is a complex process: the behind-the-scenes work that goes ➤

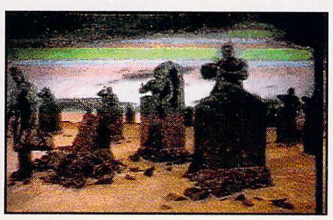


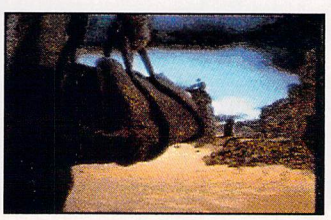








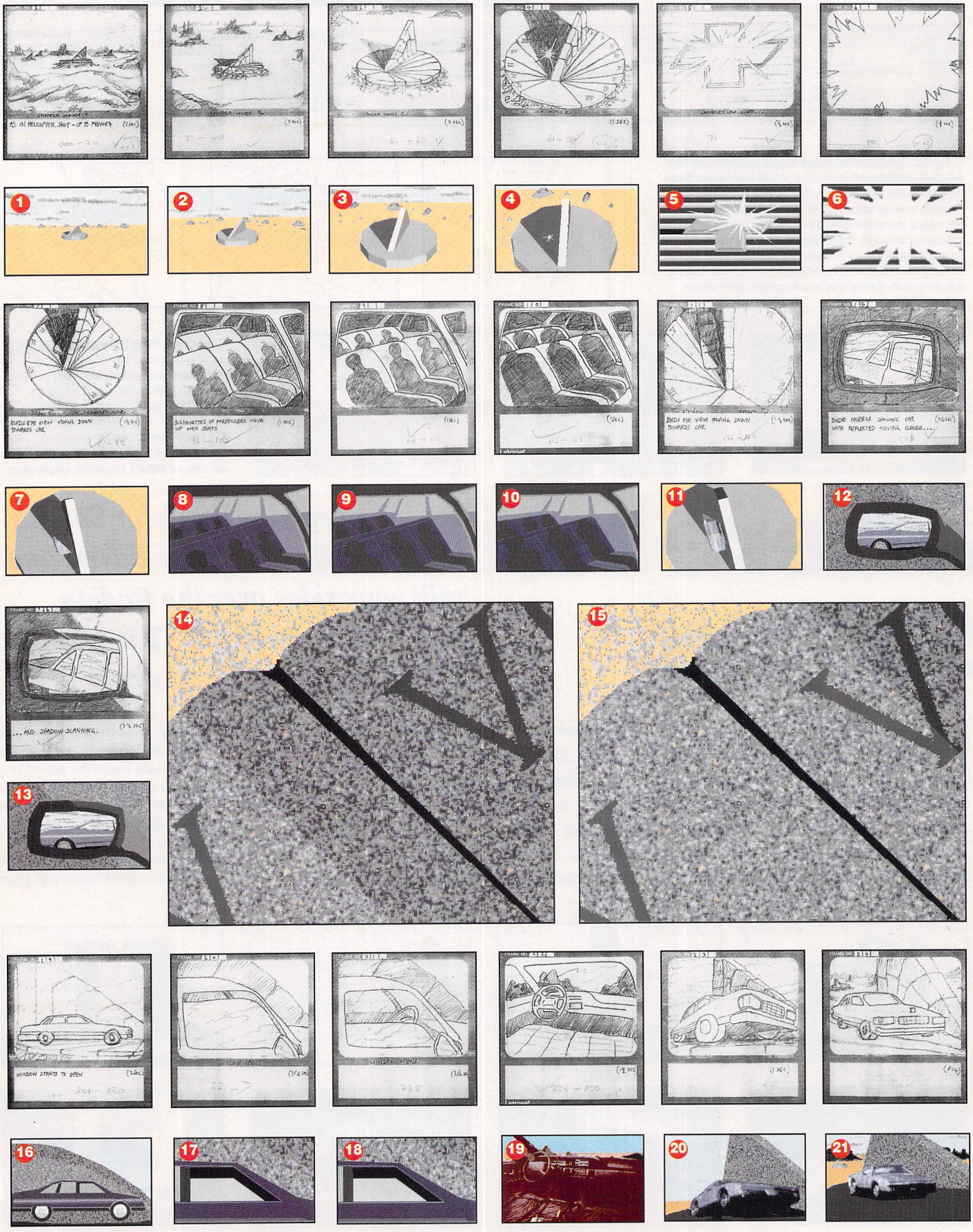






■ **A side benefit to producing an ST mock-up of adverts is the opportunity to work out complex trick shots early on. Last year Mike was commissioned to produce a mock-up of a Chevrolet advert for America. The Director of the commercial wanted to look down on the car from a very high angle so that a sun-dial in the foreground would give the car a majestic setting. When the time came to shoot the advert, the Director contacted Mike to find out the exact height used in the ST simulation. This height would have been impossible to calculate if an ordinary storyboard had been used, but the accuracy of 3D programs meant it was no problem for the ST.**

This advert is split into five separate frames which are overlaid one on top of the other. There are three planes of clouds used, one layer for the sundial and one for the car. Using *Cyber Paint*, Mike overlays the images on top of each other. "*Cyber Paint* is by far the most impressive paint package for the ST, bar none," insists Mike, having put it through its paces on all of his TV projects



SOFTMACHINE

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Star LC24-200	£239.99
Star LC24-200 Colour	£299.99
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Roctec 1Mb 3.5" Drive	£64.99
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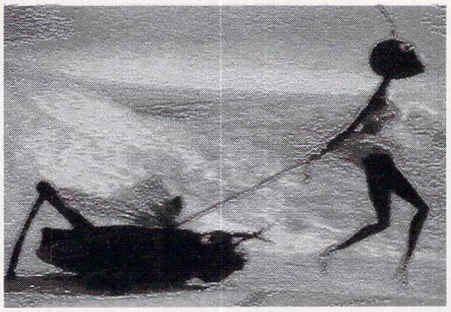
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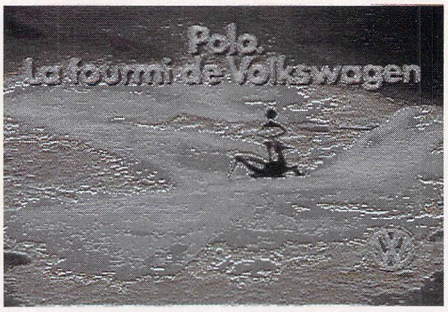
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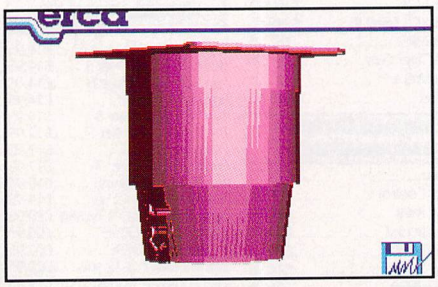
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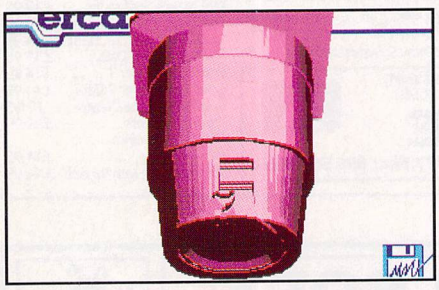






■ The ST visualisation gives the Director a chance to see exactly what works in an advert and what doesn't. When Mike was asked to create a Volkswagen Polo advert for an advertising company in France, they changed the advert three times in five days because they could see it wasn't heading in the right direction. It's this sort of versatility which is making Mike's outfit so successful

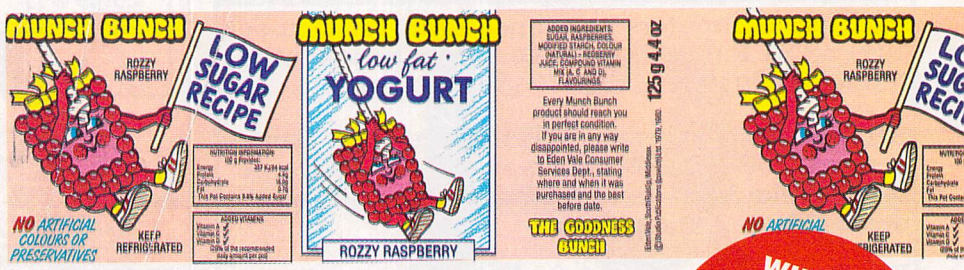








■ Mike's special technique of touching up digitised images has found another outlet as well: he's also been creating graphics for Addictive's next game – *Football Manager 3.* He needed to produce isometric views of football players for the on-pitch action, so he took his video camera up to a balcony where he could look down on the car park below. A friend of Mike's agreed to dress up in full football kit and run around the car park making all the desired moves. Mike then took these pictures to his office and transferred them onto his ST. Next each image in the sequence was coloured and shrunk down to suit the playing area, and these graphics were then imported into the game. According to Mike, the resulting graphics are outstanding. "You can even see their hair move when they run," he boasts



■ Recently, Eden Vale contacted Mike to design a yogurt pot which included their Rozzy Raspberry logo. The images above show the basic pot. To give Eden Vale an idea of how the finished item would look on the shelves, Mike added a dummy label. Recognise the pot? Because the pot was designed in *Cyber Paint,* it was possible to work out the exact measurements for the mould

WIN THE GRAPHICS SOFTWARE THE PROS USE! TURN TO PAGE 136

➤ into producing one minute of film stretches on for months and soaks up money faster than the Channel Tunnel. When a company decide to make an advert, their Creative Director first seeks out an ad agency to use – such as popular ad giants Saatchi and Saatchi. The Creative Director and the agency between them decide on how they want the advert constructed. With ads being such an important concern, many people at the company contribute their opinions of a rough plan of the advert and then storyboards are drawn up. These look similar to cartoon strips and show in detail all the different camera angles to be used and any trick shots required. Then a Director is called in to coordinate the filming of the advert.

In a traditional system, the Director would shoot the advert to film, based on the storyboards he was presented with. If any changes were needed after this, the advert would need to be re-shot – a very costly process.

With the ST involved, however, the Director has the chance to see exactly how the advert is going to look before it is shot. He and the ad agency between them can decide what, if anything, needs to be changed to make the advert work more effectively before splashing out on the really expensive part of the process and shooting the advert to film. Any changes to the advert are tested out on the ST before the final film is shot.

At the moment, Mike's company is the only one to use any type of computer like this. "Everyone is thinking about using computers in the area of post-production but I'm the only person to use an ST in pre-production," boasts Mike. ***stf***

■ **Most of the software mentioned above can be purchased in the shops. Mike also tests software for other companies and is currently assisting with the design of *Chronos Professional* from Lexicore – due for release around October. Watch for details in *ST FORMAT.***
■ ***Chronos* £169 Condor ☎ 0734 810066**
■ ***Cyber Paint (STF* 23: 89%) £51.00 Electric Distribution ☎ 0480 496666**
■ **SAM digitiser *(STF* 24: 79%) not currently available. For enquiries contact Advanced Concepts ☎ 0243 671149**
■ **Vidi-ST *(STF* 24: 96%), bundled with Vidi-Chrome ST for colour digitising, £119.95 Rombo Productions ☎ 0506 414631**
● **Did you miss our full roundup of digitisers in issue 24? For back issues, see page 110**

On the cards

Fed up with scribbling your name on the back of an old fag packet? Self employed? Need invitations, or just want to send a few cards for fun? There is a quick, inexpensive solution. Keith Pomfret reveals how a UK firm has taken an ST and a printer and turned them into Express Card

When Photo-Me International – the firm who provide all those passport photo booths in Woolworth's and on bus stations – turned their hand to personalised business cards, they chose not the print industry standard Macintosh but the Atari ST. The combination of a thermal printer and the 520 STFM, with its open architecture, proved a cost-effective solution that gave their Express Card service excellent results.

Instead of a trip to the printers and a lengthy wait for the cards, Express Card enables anyone with two pound coins to have personalised cards printed in a couple of minutes. Prototypes were tested in several locations in France. The French lapped it up, presenting cards as hellos, *billets doux*, invitations – and even business cards. Machines were soon planned for this side of the channel.

The 520ST was chosen as the ideal hardware to drive a simple, intuitive, graphics-based printing program. The program is on a standard double-sided disk, and because the whole process is software based it can be configured for any country, language or alphabet and updated simply by changing disks.

The normal ST keyboard is buried deep in the machine; you actually use a touch-sensitive keypad with alphanumeric characters, punctuation and correction keys. The program is menu-driven – and while it allows you 12 minutes to design your card, the people we watched only took about three.

Express Card looks like a science fiction lectern in glossy blue and white, and as well as displaying suggested uses for the cards shows the 24 different designs available. Some of these follow a strict format and others are more "freestyle," enabling you to modify them to your own design. For £2 you can either have 50 business cards or 25 of the double-size announcement cards.

You first choose the type of card, then type in the message on the touch-sensitive keypad. Photo-Me have designed the UK version with the keypad in alphabetical order rather than the standard QWERTY typewriter order, because they feel that most people aren't typists and are more comfortable with the more logical alphabetical layout.

The whole process from coin-drop to card is guided by a simple, intuitive on-screen menu. Mistakes can be corrected with a correction key that enables you to step back through the process until the mistake is reached.

An hour or so standing by the machine showed a wide range of people using it: a rep who'd left in a hurry and forgotten his cards; a charity worker who confided that it was the simplest and cheapest way for them to print invitations; a window cleaner who was pleased that it printed just enough to canvas a street. At least five people chose to print humorous (and even vaguely smutty) cards. Three giggling schoolgirls argued over who really loved Wayne but eventually compromised and decided to share him. They'd gone to the machine to print invitations to the school dance but the simplicity of the Express Card machine had led them to impulse-buy another £8 worth, "just for fun."

David Cumberland, Photo-Me's Marketing Manager, is enthusiastic. He said the machines were proving to be so popular that Photo-Me were stepping up production to meet the demand. "People assume it's a business card machine," he said, "but there have been a lot of fun cards and joke business cards made on it. With Express Card, it's generally an impulse purchase," he added. "Maybe in a couple of years' time, when people know where the machines are, they may plan a special trip to one for cards, but at present they see the machines and just use them on impulse."

Photo-Me are happy with the flexibility the ST offers. "The programs can be carried on disk, and that makes it easier for our engineers to service the machines," Cumberland says. "We have over 150 engineers servicing our photo-booths and they are being trained to service Express Card as well."

David Cumberland wouldn't be drawn on Photo-Me's plans for the future, but he did confirm that their research and development division was looking at digital cameras and electronic photography. So who knows? It might not be too long before a combined photo-booth/business card machine can print business cards with a digitised picture on them. Full colour copying and printing, as in the print shops, could be added to the equation too. The technology is certainly there, and the ST is definitely the machine to do the job – or be presented with its cards! ***stf***



■ **Footware, ladies' apparel – and instant business cards. Photo-Me's ST-based Express Card machines are appearing in Post Offices and chain stores everywhere**

THE KANDY KOLOURED TANGERINE FLAKE STREAMLINED PICTURE SHOW

Are you ashamed of your pics? Afraid to show them to the whole ST world? Don't be! Come out of the art closet, flaunt them brazenly in our face and shout, "yes! I am an artist and I don't care who knows it!"

Just take a look at the beeyooties we've got this month. It doesn't matter what you draw as long as you're inspired by it – just because you copy an existing piece of art doesn't mean the picture is any easier to do. All we ask for are plenty of stages showing your magnum opus from initial sketches to the full-blooded tour de force in all its throbbing Technicolour glory.

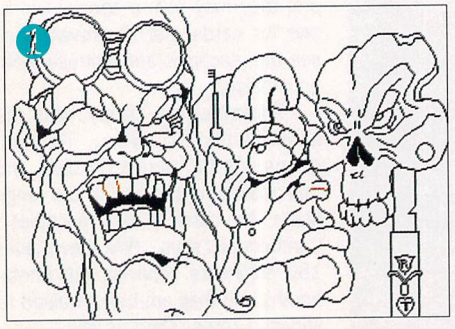
Get your works onto a self-addressed virus-free disk and into a Jiffy bag with reams of documentation on how you recreated Michelangelo's David (for example), and send the lot to *Gallery, ST FORMAT*, 30 Monmouth Street, Bath, Avon BA1 2BW. Don't worry if your pics don't appear immediately – we hang onto everything. ***stf***

A MEDLEY OF ABSTRACT WEIRDOES

£25 STF PRIZE WINNER

Just to prove that talented ST artists are found worldwide, our winner this month is a **Rob Poldervaart** from the **Netherlands.** Rob says he mainly played games on his ST until he saw our *KKTFSPS* pages and was inspired to produce his own efforts. This picture took him around 20 hours to complete using *Degas Elite* and *CyberPaint.*

❶ "I did this outline with the K-Line function in *Degas Elite* and it serves as a basic framework for the rest of the picture.

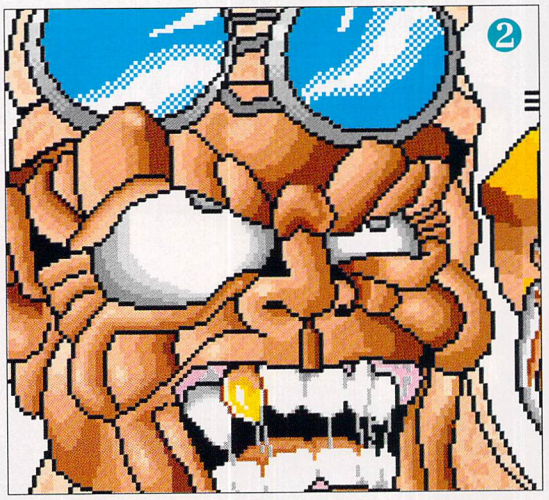


❷ "Next I added colour to my picture, pixel by pixel using the Magnify mode. This is a painstaking process but worthwhile. To give the picture a little bit of extra depth I used different shades of brown and grey.

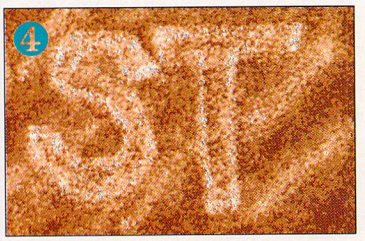
❸ "I then added black to the background and began drawing the background that would eventually appear in the finished drawing. I made a rough drawing of it using the Airbrush and then switched to *CyberPaint* and softened it using the Defocus option.

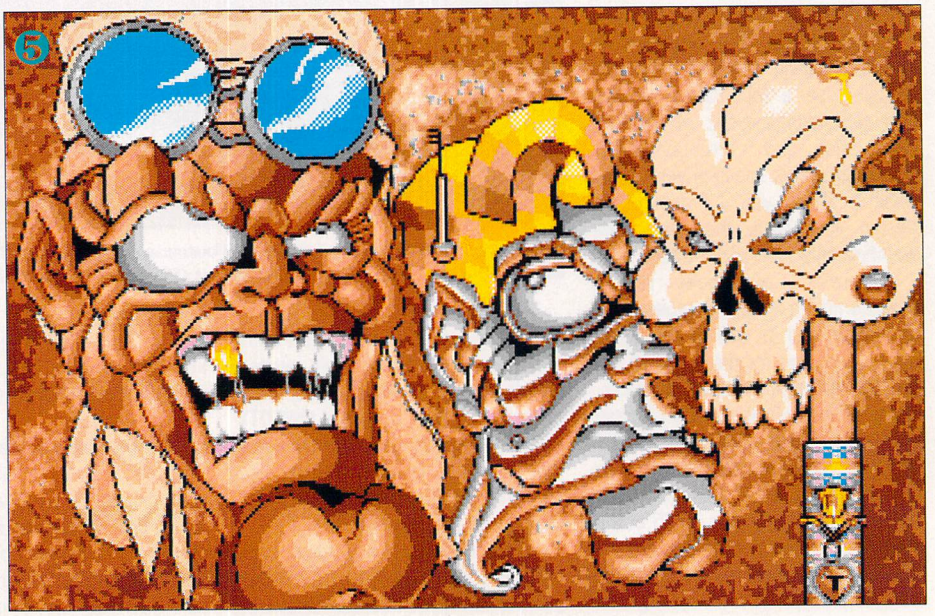
❹ "Finally all that needed doing was to cut out the three figures and paste them onto the background. The whole picture was then antialiased to create a softer look."

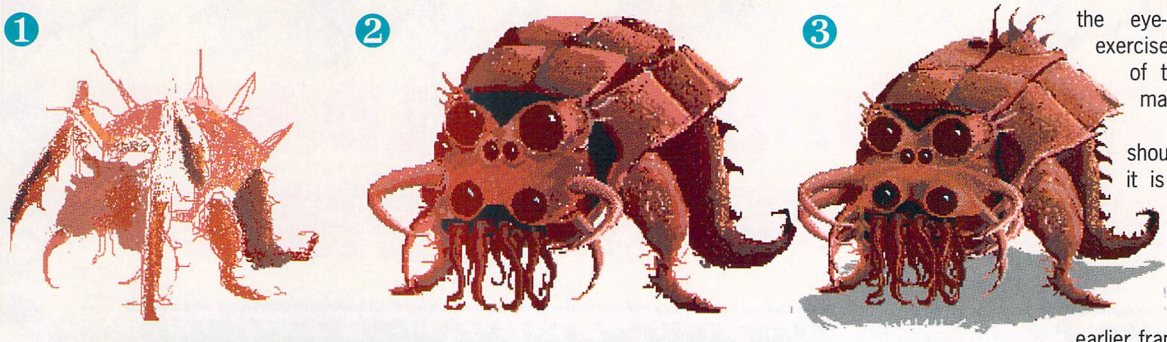
■ ***CyberPaint*** **£51.00 Antic/Electric Distribution**
☎ **0480 496666**











THE BEAST FROM A COUPLE OF FATHOMS

Richard Vernon of **Manchester** offers this pleasant-looking beastie – imaginatively entitled "Beast." He says he hasn't had any formal art training but is trying to get into the game graphics field. He uses the ever popular *Degas Elite*. Of no relevance whatsoever is the fact that Richard is a toy tester by profession – someone's got to do it.

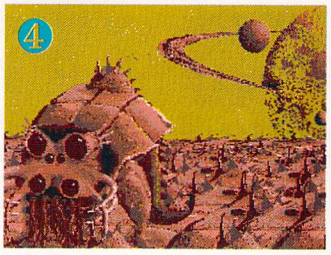
❶ "The original rough design was sketched out using a high flow/ small head airbrush setting, with the draw tool used for the more specific details. Only ten of the available 16 colours in the ST palette were actually used for the picture because I originally wanted to save some for further additions.

❷ "Here you may notice the design has changed because the arms were hiding too much of the facial detail. I always change my designs as I go along – if I think of something better, that is!

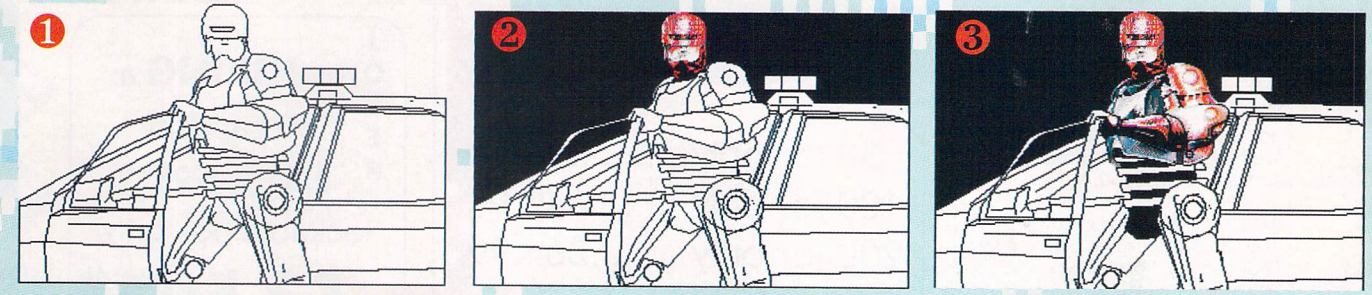
❸ "This frame sees the advent of the tentacles and also further detail added to the legs and tail. More use is now being made of the magnifying option, but I'm always careful not to add too much final detail too soon in the drawing.

❹ "It was at this stage I decided the beast wasn't fierce enough, so I created a block out of the original head and superimposed it over the original, thus doubling the number of horns and tentacles. This was the eye-straining part of the exercise because I added much of the final detail using the magnifying tool.

"This part of the process shouldn't be underestimated – it is the smaller details that make or break a picture. For this reason, smear and spray tools have a limited use because you've used them in the earlier frames. I created the ground shadow on a separate screen and the beast was blocked and then pasted onto it. Finally the whole beastie was pasted onto the separately-drawn background."



THE RETURN OF ROBOCOP 4



Groans from the back. Another flippin' picture of Robocop, I hear you think. Well, it may be, but it's a good pic with lots of steps – 19 originally. **Marcus Bird** of **Northants** drew this from an advert using *Degas Elite*.

❶ "I started by drawing the outline of the car and Robo himself using lines and circles. I then added the main colour to the background.

❷ "Next, I added colour to Robo's head, starting with the lighter shades and adding darker shades of red and then the greys to finish.

❸ "Now I've begun shading the top half of the breastplate, together with colour on the shoulder – again beginning with the lighter colours and adding darker colours over the top for detail. I then added colour and detail to the elbow and shaded in the lower arm. I filled in the gaps between the ribbed parts of the body with black and then finished off the shading on the lower part of the breastplate. I then completed the centre section of the body and shaded in the right leg.

❹ "The left leg was then shaded, starting with the lighter base colours and followed with dark colours for detail. I then began filling in the car, starting with the lights and the car body.

❺ "I filled in the front door of the car, smoothing off and modifying the front, then finished it off by adding colour to the windows and shading the interior. The shape of the front of the car and the dashboard were modified and repositioned at this stage to improve the proportions.

❻ "The last details such as the separately-created text and the background city lights were then added to finish the picture off."

Marcus also included some general tips:

1. Choose a palette carefully – ensure you've got the colours you need to draw your picture.

2. Always try to draw a rough outline of the picture on the screen first so that you can make sure it is going to fit on the screen and that everything is in proportion.

3. Frequently stand back from the screen, with your head level and not at an angle to it, and make sure the proportions, shading, colouring and detail are all as they should be.

4. When adding colour or detail, work on a section of the picture at a time – the background for example.

5. Frequently save the picture you're working on in case of a power cut or in case you make a major mistake.

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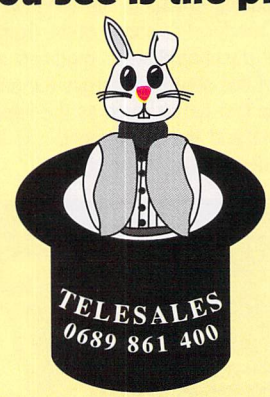
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UNDER THE DESKTOP

Boring, boring, boring! Whichever way you cut it, the ST bog-standard Desktop screen is stunningly underwhelming. So why not jazz it up a bit with these smart tips from **Paul Waldron** of **Maidstone?** To customise your standard ST boot-up screen, you need a word processor that can save data as ASCII – *1st Word* and *Protext* can both handle this.

First, use the in-built "Save Desktop" function to create a file called DESKTOP.INF on a blank disk. Then load this into your word processor. On screen you see line after line of seemingly meaningless data, all beginning with the hash mark (#). These lines are where the ST stores all its important information about the startup, which you can alter.

The first few lines are used for defining the disk drives and look something like this:

`#a000000` (drive A: 000000 means it exists)
`#b000000` (drive B:)
`#c???000?000<00<?00;;400;0;;;4440??0;;?0?;0;;;0??03111103`
(cartridge port – don't alter this!)
`#d` (drive D or RAMdisk, which in this case is non-existent)

The drive info is best left alone, for several reasons. The ST automatically saves the correct data (whatever your drive configuration) when you create a DESKTOP.INF file. There's no point in making it think you have extra drives when you don't – things only go wrong. Also, the cartridge port is a bit special – alter things and the ST can sometimes fail to boot at all!

After all the drive info there's data on the startup resolution:

`#E 00 13` (second byte can be altered. 11=low res, 12=medium, 13=high)

These bytes are definitely useful. Change them and your ST boots up in a different resolution. Change the last two digits only to make it work. However, STE owners may have difficulty in getting the medium resolution mode to work. This is because of an early STE bug which has been fixed on newer models. But if this is giving you hassle, there is a solution: just tell your STE to boot up in high resolution (13) and it defaults to medium. Quirky, but effective!

Next follows the data on the window sizes to be used:

Good morning, sir. What seems to be the trouble? Having a spot of bother with your disk drive, looking for the light of your life or just trying to improve your looks? Well, Dr Jackson can help... but not on the NHS

`#W 03 00 18 03 10 08 08 a:\*.*@`
(open window W with a directory of everything on drive A:)
`#W 00 00 02 0B 4C 09 00 @`
(window position)
`#W 00 00 0A 0F 34 09 00 @`
(window position)
`#W 00 00 0E 01 34 09 00 @`
(window position)

Window altering is only for diehard propellerheads. There's little point in doing it via a word processor because it's so tedious. It's best to just set up the windows you require before saving the Desktop in the usual manner. It does the same job, so why make work for yourself?

After this comes the position info for the drive icons:

`#M 00 00 00 FF A FLOPPY DISK@ @`
(place drive A: icon on Desktop)
`#M 00 01 00 FF B FLOPPY DISK@ @`
(same for drive B: icon)
`#M 00 02 02 FF TRASH@ @`
(same for trashcan icon)

```
^^
^^ 00 = Disk Drive
^^ 01 = Folder
^^ 02 = Trashcan
^^ 03 = Program
^^ 04 = Document
```

Changing the drive icon info can be interesting. The third byte in the sequence (the one before the `FF`) determines the icon type displayed, so altering this can turn your drive icons into folders or files (if you wish!). A 0 is a disk drive icon, a 1 is a folder, a 2 is a trashcan, a 3 is a program and a 4 is a document.

The two bytes after the `M` or `T` determine the X and Y position of the icon on-screen. After the `FF` is the drive label (A, B, C, etc), followed by the name (FLOPPY DISK, TRASHCAN or similar). These can be changed if you so desire.

After that there's data for the icons to be used for the various filetypes:

`#F FF 04 @ *.*@` (define icon for files)
`#D FF 01 @ *.*@` (define icon for folders)
`#G 03 FF *.APP@ @` (select loading procedure and icon for APP files)

TEN QUICK *DESKTOP* TIPS

❶ **Never remove or insert the monitor plug when the power's on. This causes an automatic reset and may even blow the ST's video chip.**

❷ **When powering down, turn off any hard drives before turning off the ST. If the ST talks garbage just as the power goes off, there's no telling what it could do to the hard drive's data.**

❸ **Never remove or insert cartridges with the power on. You'll almost definitely blow either the Memory Management (MMU) chip or the ST's main RAM. Costly!**

❹ **When using a virus killing program (like the one on this month's Cover Disk) make absolutely sure you actually have a virus before wiping the bootsector. Most commercial games use auto-booting bootsectors that are often incorrectly detected as viruses by some killers. Destroy the bootsector of a game and it's totally useless afterwards!**

❺ **Turn off the joystick autofire before booting. It locks up your ST and prevents it from starting properly.**

❻ **Don't ever listen to anyone who knocks your ST! It's a faster machine than the Commodore Amiga games machine, cheaper than the PC and can run Mac software (with an emulator) as well as the Mac can. All other machines are also-rans!**

❼ **If your ST suffers from a crackly on/off switch (and sadly, many do), always remove any disks from the drives before you throw the switch. In rare cases, disk data can be damaged if you don't.**

❽ **If you're still stuck with a single-sided drive, get it upgraded as soon as you can. Software houses are beginning to move over to "one Meg only" software on double-sided disks. Check the adverts in this issue to find dealers and repair shops who can help you upgrade. Don't get left behind!**

❾ **Don't forget your mouse! Every couple of months, remove the ball and clean any gunk off the silver rollers. If it gets clogged, your mouse behaves erratically, making life hell.**

❿ **Next time you have a problem and you manage to solve it, just think how many others are still suffering from the same hassle. Drop *Desktop* a line, tell us what you know and we'll pass it on.**

LIGHT AT THE END OF THE TUNNEL

Searching for the light? Trying to find a lightgun for an STE is like looking for a parking place in Piccadilly. There just aren't any! However, with a soldering iron and and five minutes, you can turn an old Sinclair Spectrum lightgun into one suitable for your STE. **Steve Bowgen** from **Chester** has done it, and here's how.

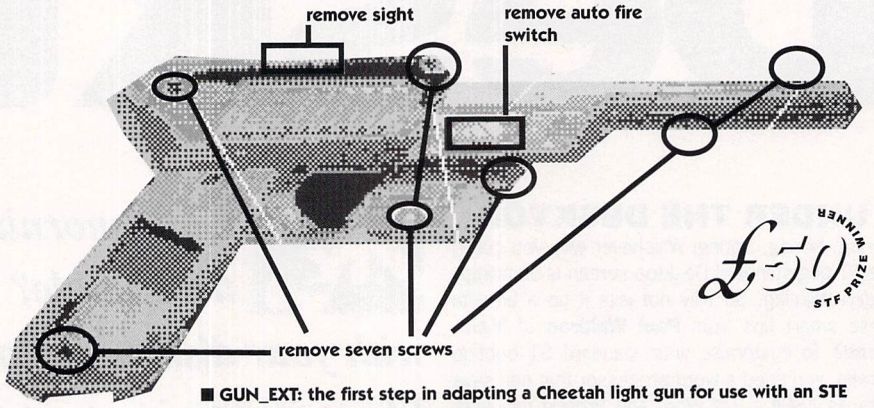
Before you begin, the parts you need are:

- Cheetah gun for Spectrum +3 Computer (Cheetah "Defender," £24.99 from Cheetah Marketing Ltd ☎ 0222 867777)
- 15 Pin D-connector male (Tandy Stores)
- Short length of wire

The lightgun is wired to work off the 12 volt supplied by the Spectrum. Inside the gun on the circuit board is a resistor which drops the voltage to the +5v the circuit needs. The STE supplies +5 volt, so the resistor is not needed and must be removed and replaced by a wire link to make the gun work. You gain access to the circuit board as follows:

❶ Lay the gun down with the screws uppermost. The sights must be removed by sliding them to the back of the gun. Then the auto-fire switch must be lifted off.

❷ The red handle must be removed by sliding it down towards the cable and lifting it off. The seven screws can now be removed (see diagram GUN_EXT above) and the gun case opened to expose the circuit board.



■ GUN_EXT: the first step in adapting a Cheetah light gun for use with an STE

❸ The cicuit board is held in place by two screws. Remove these, put them aside and carefully lift the board. Identify R1 (see diagram GUN_INT below) and remove it, replacing it with a wire link. Replace the board and screw it in position again.

❹ Identify the four wires W1-4 and make a note of their colours. These should be

W1 RED
W2 BLUE
W3 WHITE
W4 YELLOW

– but check your gun in case they are different. After you make a note of the colour and position of the wires the telephone-type plug on the end of the cable can be removed.

❺ The cable must now be connected to the 15 pin D-plug. The connections to the D-type plug (looking from the wiring side) are as follows:

5 4 3 2 1
10 9 8 7 6
15 14 13 12 11

Connect the cable as follows:

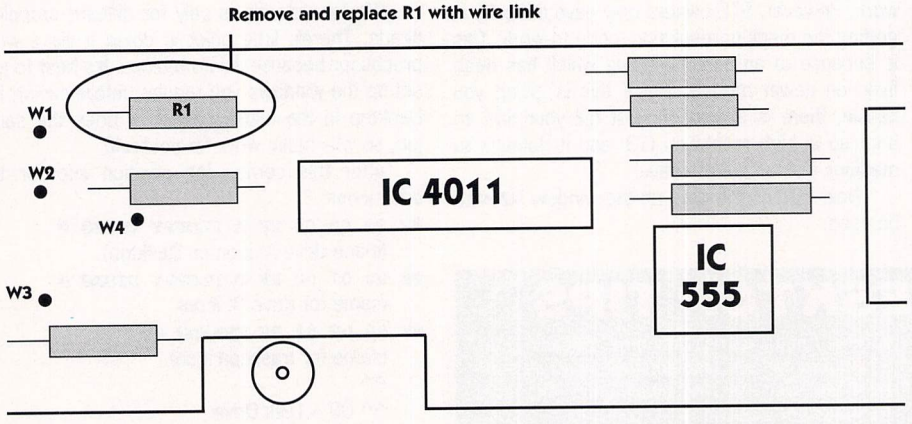
W1 Pin 3 (Lightgun fire)
W2 Pin 7 (+5 volts)
W3 Pin 9 (Gnd)
W4 Pin 6 (Lightgun position)

❻ Replace the cover on the gun and screw it back in place. Refit the red handle, sights and auto-fire switch. Fit the cover to the plug following the directions supplied with the plug. The plug cover may need shaving down with a scalpel or similar, because the STE casing is a bit close to the socket.

❼ The STE uses the following memory locations to access the lightgun:

DEEK($FF9220).....LIGHTGUN X POSITION
DEEK($FF9222).....LIGHTGUN Y POSITION
DEEK($FF9202).....LIGHTGUN FIRE BUTTON

All you need to do now is write a program to use the gun! You can do this with *GFA Basic 2* or *Devpac 1* (yours free on Cover Disks 19 and 22 respectively – see page 110 if you missed either). When you've done it, write to *Desktop* and tell us about it. You could win some cash!



■ GUN_INT: the Cheetah light gun internal circuit board

TIPS! BRING OUT YOUR TIPS!

If you've got a problem that's gnawing at your brain, send it in to Desktop before you go insane. We'll try and sort your hassles and take away the hurt, 'cos we've got Neil Jackson and his amazing lumberjack shirt! But seriously, folks, there's well over 70,000 fellow ST enthusiasts reading these pages out there, so if you've got a dandy-handy Desktop tip, send it to us and you could win up to £50. Or, if you have a technical problem or query, we want to hear about that, too. Remember: a problem shared is a problem two people have got. Share it round and win more than a pound (possibly)!

Name _____

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Brief description of tip _____

_____

_____

Please complete this formette and send it, along with your tip, to: DESKTOP, *ST FORMAT (The funkiest magazine ever)*, 30 Monmouth Street, Bath BA1 2BW.

```
#G 03 FF *.PRG@ @      (ditto for PRGs)
#P 03 FF *.TTP@ @      (ditto for TTPs)
#F 03 04 *.TOS@ @      (ditto for TOSs)
```

There are a variety of things you can do with the file icons. Change the icons by altering the byte after `FF`, using the same codes as for the disk drive icons above. Directories can also be changed in this way. The `*.*` bit just tells the ST to default to this type of icon for any filetype which isn't specifically mentioned later in the list. For example, if you wanted to make all directories with the suffix STF look like a disk drive, just add the following line to the list, after the initial `#D` lines:

```
#D FF 00 @ *.STF@
```

You can do the same trick with files. If you wanted your PROGRAM.BAS file to look like a program-file icon, add a line after the other `#F` lines:

```
#F FF 03 @ PROGRAM.BAS@
```

You'd still be unable to double-click on the icon,

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because only the icon has changed, not the actual program, which is still a BASIC listing.

Program files are a bit different because they have a loading procedure added. The first letter (after the #) and the third byte (usually FF) determine the loading procedure to be used:

- #G denotes a GEM-based program,
- #P denotes a TOS Takes Parameters (TTP) program, and
- #F denotes a bottom-of-the-range TOS program. Note: TOS files use a different loading procedure to the others, hence the 04 instead of FF.

The second byte selects the program icon to be used, just like the drives and files above.

The *.APP, *.PRG, *.TTP or *.TOS denotes the various filetypes. For example if you wanted to rename a PRG file to PROGRAM.STF and still get it to work when double-clicked, add the line:

```
#G 03 FF PROG.STF@ @
```

The PROG.STF program is then displayed with a PRG-type icon and it can be run in the normal way. For a global change, you can add the line:

```
#G 03 FF *.STF@ @
```

This causes any STF file to be displayed with a PRG-type icon which is double-clickable.

Phew! Now that wasn't so hard, was it? If it's beyond you, the best alternative for sprucing up your Desktop is *NeoDesk 3* (£40.82 Electric Distribution ☎ 0480 496666).

DON'T BELIEVE THE MEDIA

If you're thinking of upgrading or replacing your ST's disk drive, take some advice from **Patrick Huston** of **Stockport** before you spend your money. Make sure the drive you buy is made by Epson and you'll be okay.

Why? It's all to do with the media change flags. "What the heck are those?" we hear you cry. The ST's operating system (BIOS) sets the media change flag when the disk in the drive is removed and replaced with another. The flag can have one of three meanings:

- **0 = media definitely not changed (the disk hasn't been removed).**
- **1 = media may have changed (the disk has been removed but the drive can't tell if the new one is actually the same disk).**
- **2 = media definitely changed (the disk has been removed and an entirely different one has been inserted).**

Sony and Citizen disk drives are wired up to return 1 permanently. Use these and you're left in the hands of programmers. Your ST can no longer recognise a definite change of media. If the program you're using assumes there has been no change unless it receives a 2 from the BIOS, it may damage disk data. (Patrick can bear witness to the distress this causes!)

If you're in any doubt, you can check your drive using a short program like this *Power BASIC* listing:

```
' Check for media change under controlled
conditions

' Start program, then remove disk from
' drive and replace with another, or the
' same disk. Watch screen for info. A
' suspect drive returns "possible change"
' all the time
'
'Press ESCAPE to exit program
'
library "bios"
defint a-z
ch=fnmediach(0)
cls
do
    a$=inkey$
    ch1=fnmediach(0)
    select on ch1
    case 0
         print "no change registered"
    case 1
         print "possible change"
         k$=input$(1)
    case 2
         print "definite change"
         k$=input$(1)
    case remainder
         print "???? ";ch1;"!"
         k$=input$(1)
    end select
loop until a$=chr$(27)
```

Alternatively, *always* press <Esc> every time you change disks, and *check* the directory!

GFA Basic programmer's surgery

Once again, Barrie Capel tackles your GFA programming problems

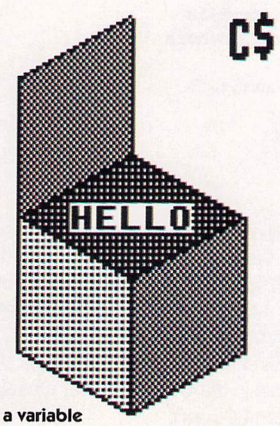
Creating drop-down menus with *GFA Basic* seems to be a subject many of you want to know more about. This process uses dimensioned array variables, so in case these are new to you we'll take a look at them first.

Dimensioned Array Variables

Normal variables, like A% and B$, can contain values and alphanumeric characters respectively. For example:

```
A%=32
C$="This is an example string."
```

Imagine the variable as a single box in which you store a value or sentence. In order to store more elements, you have to create more boxes such as A1% or C1$ and so on (see figure 1). Obviously if you have lots of variables you have to have lots of variable names.

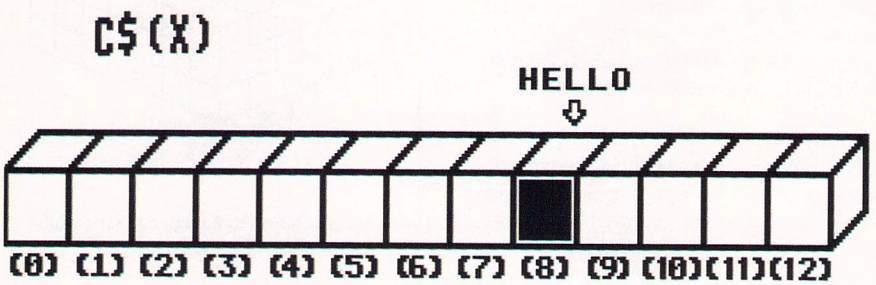


■ **Figure 1: a variable**

Dimensioned arrays are an answer to the problem. These enable you to create more than one variable from the above example names A% and C$. You do this by DIMensioning the variable to tell *GFA Basic* how many "subscripts" you want. When you DIMension a variable, you merely state its required size. You can deal with both numeric and string arrays – imagine storing values or sentences in a row of connected boxes (or elements) – see figure 2.

```
DIM A%(12)
DIM C$(12)
```

The above tells *GFA Basic* that we want to use 13 variables called A% and 13 variables called C$, (variables (0) to (12) = 13 in total). Each variable acts like a normal variable and can consist of strings of up to 32K in length for example. Thus



■ **Figure 2: a string of variables... Oh, all right, they're really little boxes. It's, like, a metaphor, innit**

our connected boxes are named A% and C$, and divided up into 13 boxes – each numbered from 0 to 12.

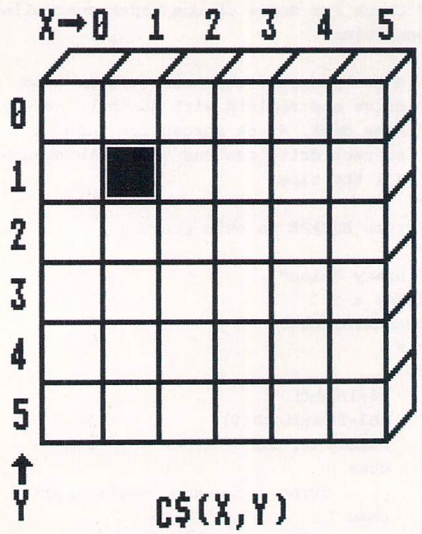
You use them in exactly the same way as normal variables, only you identify the required variable by placing the required element number in brackets after the variable name.

```
C$(0)="This is element 0 of C$."
C$(1)="This is element 1."
C$(2)="This is another element."
C$(8)="HELLO"
```

When you get the hang of it, you can replace the values in brackets with numeric variables.

Taking this idea one step further, you can also have multi-dimensioned arrays. The two-dimensional array, for example, stores the variables in a 2D grid format (see figure 3), which is created using:

```
DIM C$(5,5)
```



■ **Figure 3: "Caterpillar Orgy," by A Cubist**

Imagine this as storing values or sentences in the boxes on one surface of a Rubik's Cube. The first figure in brackets shows the number of boxes across the cube and the second figure shows how many boxes run down the side. The variable returned reflects the value stored at the point the two given values intersect. This type of array is sometimes called a matrix.

In figure 3, the element highlighted is `C$(1,1)`. We can even dimension `C$` with

```
DIM C$(6,7,6)
```

which produces a three-dimensional array just like a Rubik's Cube – see figure 4. The first two values inside the brackets refer to the horizontal and vertical positions on one side of the cube, while the third value indicates the depth (or number of layers) into the cube. These arrays are used to store the coordinates of 3D graphical shapes in vector graphics programs.

In figure 4, the highlighted variable in the centre of the cut-out is referred to as `C$(4,2,3)`.

Drop-down menus

GFA Basic provides a number of commands specifically to create menus – typically `MENU m$()`, `MENU X,Y,` `ON MENU`, `ON MENU GOSUB`, `MENU OFF` and the function `MENU()`.

To produce a menu, you need to create with the DIM command a single dimensioned string array such as `a$(x)` or `m$(x)`, where x is the number of entries you wish to have available, including title bar entries and entry separators. At first, if you don't know how many there are going to be, you can choose a larger value and reduce it later on.

All menu entries are stored in their own elements in the order they appear on the menus. However, there are some rules you must stick to:

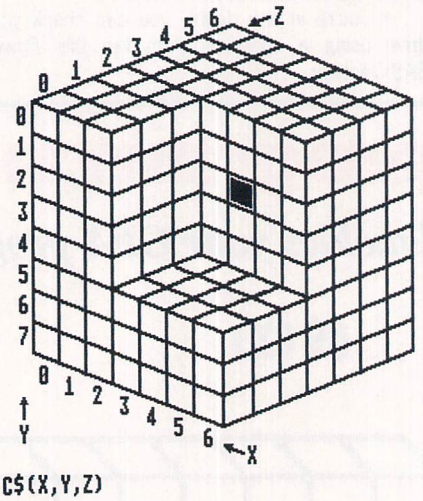
1. The first entry (element 0) must be the title of the drop-down menu in which GEM places any Desktop Accessories – normally "Desk."
2. Element 1 must contain your first menu entry and appear in the same menu above any Accessories. This is usually where you put an "info" or "about the program" entry.
3. Element 2 must contain a separating line of minus signs to widen the drop-down sufficiently to hold any possible Accessory names.
4. Elements 3 to 8 must be six dummy entries. The entered text is unused. They just create slots for GEM to place any Accessories. Usually, these range from –1 to –6. The minus signs at the front simply disable them.
5. Element 9 should always contain a null string (" ").

The remainder of the menu titles, entries and separating lines of text follow on sequentially. The last entry of each individual drop-down menu is followed by a null string (" "). The very last entry must also be a null string.

The example listing MENU.LST creates a menu title bar with the entries "Desk," "File" and "Options" on the title bar. When you move the mouse over:

- **"Desk,"** the entry "About Me" appears on a drop-down menu along with any Desk Accessories currently available.
- **"File,"** the entries "Load PC1" and "Load NEO" appear. (The entries "Save PI1" and "Save NEO" should also be here, but in light text and thus disabled – you can't save a picture unless you've loaded it first! – see the section on Disabling Entries below.)
- **"Options,"** the entries "Convert Pic" and "Exit" appear.

The command `MENU A$()` switches on the menu using the information in the array `A$()`.



■ **Figure 4: our solution to Rubik's cube (possibly)**

Disabling Entries

If an option needs to be disabled, you can use the command `MENU e,v`. This is useful when you need to prevent the mouse from selecting the separators in subscripts 13 and 19, or prevent a file from being saved before it has been loaded.

The variable `e` is the required entry's element number and `v` is the required value – 2 disables an entry but refer to your manual for other values. You then need to set your program in a loop – with `ON MENU` continuously checking for an "event." When a menu or window event occurs, program control passes to the procedure stated on the `ON MENU GOSUB` procedure line – in the case of our example, to the procedure `Check`.

In the procedure `Check`, the function `MENU(v)` is used to find out which event has occurred, and control then jumps to the relevant routines. The value `v` defines which event you're testing for, and `0` tells you the element value of the entry just selected with the mouse. You can find a full list of values in the manual.

Note: The procedures mentioned in the listing have not been included because this is simply an example – you can use the names of your own procedures.

The `MENU OFF` command turns off the menu bar, but the bar still remains on-screen – it is your responsibility to remove it. The simplest way to do this is to clear the screen with `CLS`. Alternatively, you can use `SGET` before using the menu and then use `SPUT` after turning it off.

LISTING 1 – MENU.LST

```
Dim A$(22)
A$(0)="Desk"
A$(1)=" About Me "
A$(2)="----------"
A$(3)="-1 "
A$(4)="-2 "
A$(5)="-3 "
A$(6)="-4 "
A$(7)="-5 "
A$(8)="-6 "
A$(9)=""
A$(10)="File "
A$(11)=" Load PC1 "
A$(12)=" Load NEO "
A$(13)="--------"
A$(14)=" Save PI1 "
A$(15)=" Save NEO "
A$(16)=""
A$(17)="Options "
A$(18)=" Alter Colours "
A$(19)="----------"
A$(20)=" Exit "
A$(21)=""
A$(22)=""
Menu A$()
Openw 0
'
Menu 14,2
Menu 15,2
'
On Menu Gosub Check
'Do
    On Menu
Loop
'
Procedure Check
    Entry%=Menu(0)
    If Entry%=1
    @About_me
    Endif
    If Entry%=11
    @Pc1load
    Endif
    If Entry%=12
    @Neoload
    Endif
    If Entry%=14
    @Pi1save
    Endif
    If Entry%=15
    @Neosave
    Endif
    If Entry%=18
    @Alter_colours
    Endif
    If Entry%=20
    Stop
    @Quit
    Endif
Return
```

That's all we have space for this issue, so our look at the subject of disk access has to wait until next issue. In the meantime, if you have any queries about using *GFA Basic*, write to GFA Programmer's Surgery, *ST FORMAT*, 30 Monmouth Street, Bath, Avon BA1 2BW. And join us here again in the October issue, on sale Thursday 12 September. ***stf***

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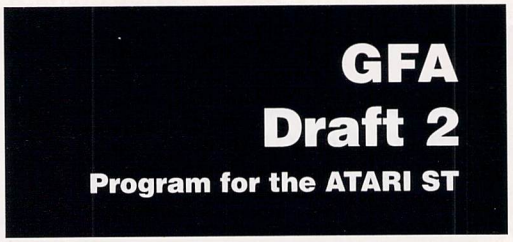
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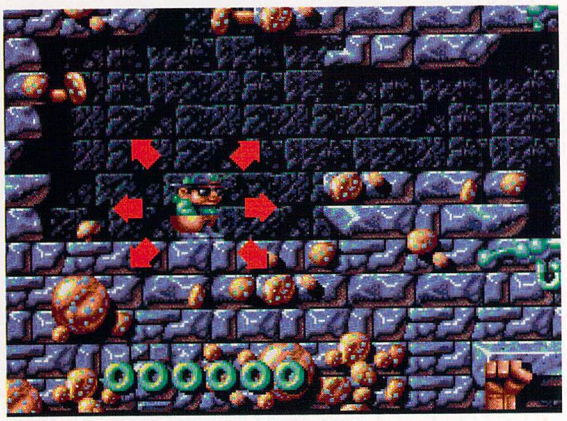
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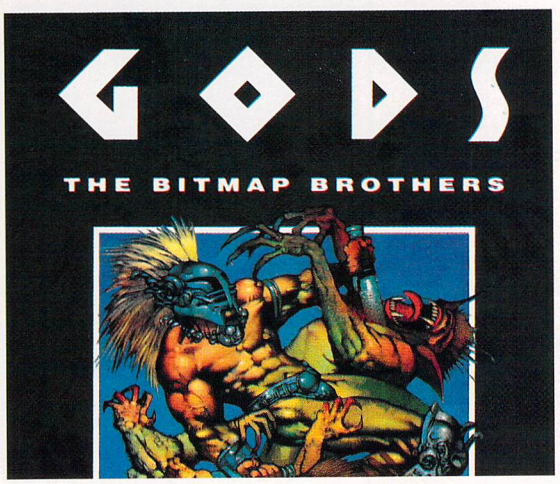
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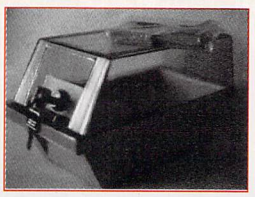
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Looks *are* everything

To bring a game to life you need creative visuals. In the fifth part of the Bullfrogs' programming series, Glenn Corpes introduces graphics to our nearly completed FORMAT Gold game



■ **Looking both creative and visual, it's the cool Bullfrog crew – the team behind *Populous* and *Powermonger***

Time to say goodbye to Gumbo. This month the graphics in our program have been completely replaced by our new graphic artist Paul McLaughlin. The badly drawn and animated Gumbo character from *Flood* used in our program up to now was fairly irelevant, and he has now been replaced by a very relevant ball-throwing unicycle, which is now fighting to the death with a bunch of evil killer mutant golf holes. It should be noted that this program is an exact simulation of a unicycle fighting a bunch of golf holes. (At least I can't think of anyone who is going to argue with me about it...)

The game

The program is now almost a playable game, in that you can shoot things until you lose all of your lives (well, your life) and get a score for it. The playability of the game is based on the "make sure it starts off really easy and ends up impossible" school of game design. *Space Invaders*, *Asteroids*, *Defender*, *Tetris* and many other games seem to have been designed like this – although there is usually some weirdo who can play them indefinitely. I'd hate to meet the person who could play "Attack of the Mutant Golf Holes" (or whatever) forever, because it is supposed to get impossible after only a few minutes – though if anybody is interested Alex (our programmer) scored 13,598 in about five minutes ('cos he's brilliant, he says). The conquest levels on *Populous* may seem to have been designed like this, but they are in fact possible. I know – I've got to the end! (Try "Biloord" and "Nimodor" for a laugh.)

If you think the game is a load of rubbish, fair enough. It isn't supposed to be a game – it's supposed to be part of an article on game programming. You do better if you think you can.

Tweaking the game

If you just want to play around adjusting the difficulty of the game, try changing these equates in the first page of the program.

`ISOCONTROL`
take the comment from this line for pseudo-isometric control

`RAPID_FIRE`
take the comment from this line for rapid fire

`MAX_SPEED`
the maximum speed of the unicycle

`MAX_SHOTS`
the maximum number of shots active at once

`BOING`
the height that the shots bounce

`SHOT_COUNT`
how long the shots live for

`NO_NASTYS`
the maximum number of "nasties" active at one time

`NA_ST_DELAY`
how long the nasties wait around before beginning to move at the start of the game

`QUICK_DELAY`
how long the nasties spend thinking about following the player

`QUICKER`
how much `QUICK_DELAY` is decreased each time the nasty thinks

`MAX_QUICK`
the smallest number that `QUICK_DELAY` is allowed to become

`NASTY_COL`
the size of the collision area between the nasties and the unicycle – bigger = harder, smaller = easier

`SHOT_COL`
the size of the collision between the shots and the nasties – bigger = easier, smaller = harder

`BIRTH_DELAY`
the number of game cycles between each frame of the nasty's birth animation

`DEATH_DELAY`
the number of game cycles between each frame of the nasty's death animation

`MAX_SH_ALT`
the maximum altitude a ball can be flying at and still be said to have hit the hole – bigger = easier, smaller = harder

`NUM_NASTYS`
the number of nasties on the first level

`NASTY_SPEED`
the minimum speed of the nasties you encounter on the first level

`NASTY_ACCEL`
the amount that the average speed of a nasty increases each "wave"

`MORE_NASTYS`
the number of extra nasties per wave

`NASTY_QUICK`
the amount that `QUICK_DELAY` is decreased on each wave

Nasties

The nasties – or NASTYS as they are referred to in the code, thanks to my inability to spell – work in a similar way to the shots introduced in our last article, so make sure you understand those before you try to follow this. (That was issue 24 – if you missed it, see page 110 for information on how to order back issues.)

The NASTY structure looks like this:

`NA_MODE`	current mode of the nasty
`NA_ALL`	for referring to all the sprite data with movems
`NA_XY`	for referring to nasties x and y together
`NA_XY_HXY`	for `NA_X, NA_Y, NA_HOMEX, NA_HOMEY` with movem
`NA_X`	nasty's x coordinate
`NA_Y`	y coord
`NA_HOMEXY`	x/y coordinate of where he's homing in
`NA_HOMEX`	x coord of above
`NA_HOMEY`	y coord of above
`NA_FRAME`	displayed image
`NA_COUNT`	countdown for birth/thinking/death
`NA_DELAY`	delay between thinking
`NA_SPEED`	speed the nasty moves
`NA_SIZE`	size of nasty structures

The mode SHOTS had only two modes, 0=dead and 1=alive. The nasties have seven:

`0 = NA_DEAD`	not currently in use
`2 = NA_INIT`	counting down to its birth
`4 = NA_BIRTH`	being born (animating out of the ground)
`6 = NA_THINK`	working out where the player is
`8 = NA_MOVE`	moving to the above point

WHERE TO START



All the files you need to work your way through this program are on this issue's Cover Disk – turn to page 22 for full details of what's there.

```
10= NA_DIE          about to die
12= NA_DYING        dying
```

The life and death of a nasty

`NA_INIT`

At the start of each wave a number of nasties are initialised. These appear as small lumps (anti-holes) which wait for a random length of time.

`NA_BIRTH`

They then open up by animating from a small "holet" to a full size hole.

`NA_THINK`

Next they check where the player is and set their destination (`NA_HOMEXY`) to his coordinates.

`NA_MOVE`

Then they home in on the player using a classic "Zombie" routine (see below). Moving at a speed randomly chosen at startup time, they move towards this point for a pre-defined length of time and then go back to the `NA_THINK` phase. The delay between each "Think" phase is decreased so that the nasties get harder to dodge as the game progresses.

`NA_DIE`

When one of your shots hits a nasty it is instantly put into this mode, which then kicks the sprite into the next mode.

`NA_DYING`

This mode animates the sprite from the full size sprite to nothing and sets the mode back to 0 (`NA_DEAD`).

Zombie routine

The "Zombie" routine is probably the simplest way of making a sprite attack another sprite. All that a Zombie does is compare its x coordinate with the player's x coordinate and move towards it by incrementing its x if it is less or decrementing it if it is more. It then does exactly the same thing with its y coordinate.

This type of chase routine has been used in loads of games – probably originally in a game called *Zombies*, where you moved around luring the Zombies into holes (or rather, luring the "*"s into "O"s – it is a *very* old game). Since then Zombie routines have cropped up in loads of games – *Gauntlet*, for instance, where just about every single baddie just Zombied at you, and of course *Robotron* and *Llamatron*. Slightly adapted Zombie routines are even more common and can be found in many different types of game. Most RPGs (for example *Dungeon Master*) use slightly cleverer versions to get the monsters to you – like the "Baiter" in *Defender*, even the "intelligent" fish in the underwater levels of *SuperMario* world on the Super Famicom and of course all of the nasties in almost all Bullfrog games (*Druid 2, Fusion, Populous, Flood, Powermonger, Populous 2* and probably most of what we do in the future).

The routine in the demo is not completely standard: it only checks the position of the player occasionally, which has a strange randomising effect on the movement and is slightly less irritating than just being chased the whole time.

Jump Tables

The routine that processes the nasties has to jump to different pieces of code for each mode. The obvious way to do this is (asuming that the mode is in `d0`) is as follows.

```
cmpi.w      #NA_DEAD,d0
beq         mn_dead
cmpi.w      #NA_INIT,d0
beq         mn_init
cmpi.w      #NA_BIRTH,d0
beq         mn_birth
cmpi.w      #NA_THINK,d0
beq         mn_think
```

and so on. The problem with doing this is that you have to do loads of compares – up to seven in this case, but if this method had been used in *Powermonger* you would have had to do up to 92 compares for each person.

Alternatively the following jump table does the same thing using no compares at all.

```
        move.w mn_jt(pc,d0.w),d0
        jmp    mn_jt(pc,d0.w)
mn_jt   dc.w   mn_done-mn_jt NA_DEAD
        dc.w   mn_init-mn_jt      NA_INIT
```

DEVPAC 2

One of the main problems with this month's program has been to get it to work with *Devpac 1*. This is made difficult by factors like not having any local labels and not being able to put comments on the same line as labels.

Any of you with *Devpac 1* should note that changing all of the "ds" instructions at the end to "dsbss" apparently saves you loads of memory and disk access in the same way as "section bss" does for *Devpac 2* users. Note though that the change doesn't work under *Devpac 2!* (Thanks to Scottney for that one.)

If you use *Devpac 2*, note that at the top of the program I turn the optimisations on. This saves 64 bytes and very very slightly speeds the program up. I then turn the optimisation warnings off – the six pages of optimisation warnings can get a tiny bit annoying.

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```
        dc.w   mn_birth-mn_jt     NA_BIRTH
        dc.w   mn_think-mn_jt     NA_THINK
```

and so on. This method is faster, smaller and at least as readable as the first, so nobody loses out and you get to use some interesting addressing modes!

Random numbers

A *very* simple random number routine has been added to the program this month. It is very fast and not very random, but it works. You can't predict where the nasties come up or how fast they move, so it's good enough.

If you want to use this routine for anything else, say to produce a random number between 0 and 11, do this:

```
bsr     _random
ext.l   d0
divu    #12,d0
swap    d0 d0 = a random number between
        0 and 11
```

WARNING: If you try to use it for a number between 0 and 7 – that is, you divide by eight – you find that the routine gives the same sequence of eight numbers over and over again. This problem occurs if you use any power of 2 as the divide (2, 4, 8, 16, 32, 64, and so on). If this causes any problems, write your own random number routine, you lazy sod.

Collision

There are two types of collision in most games. The first is background collision, which is very simple in the case of the demo – there isn't any. The second is sprite to sprite collision. If the player's sprite hits any of the holes it's game over, so all you have to do is compare the coordinates of each hole with the coordinates of the unicycle. To do this you subtract the player's y coordinate from the hole's. If the answer is negative you make it positive (using `neg.w`), and if the answer is less than `NASTY_COL` then the sprites have collided on the y. Go on to do the same check on the x – though there is no point in checking the x if there was no collision on the y! If both collide then the player dies.

You also need to check all of the nasties against all of the balls. This check is complicated by the fact that the balls bounce, so you also have to check that the ball is close enough to the ground to hit. If this happens it sets the nasty's mode to `NA_DIE` (to make it die) and then sets the shot's mode to 0 to kill it off. Since you have to check all of the nasties against all of the shots, that is 12x16 = 192 collision checks. This of course increases if you increase the number of shots or the maximum number of nasties. Some people might be thinking, "Wouldn't it be nice if the balls bounced off each other or the holes didn't overlap." Well, it would be perfectly possible, but you would need to check every hole with every other hole (12x12 = 144 extra calculations) and every ball with every other ball (16x16 = 256 extra calculations), which would slow the thing down by quite a bit. Try it if you want!

Speed

The game is very variable in speed. This is because with only a few sprites on screen it runs at 50 frames a second, but as soon as it draws a few more sprites it takes over a frame and slows down to 25 frames a second – half the speed. If it was slow in the first place, say 25 frames a second, then slowing down by a frame, to about 17 frames, would only be about a 50% slowdown. In other words, the main reason the slowdown is so apparent is that it was so fast in the first place.

You may notice that the sprite routines are not quite as lightning fast as was originally claimed. They could be sped up by pre-shifting the sprite data.

Shadows

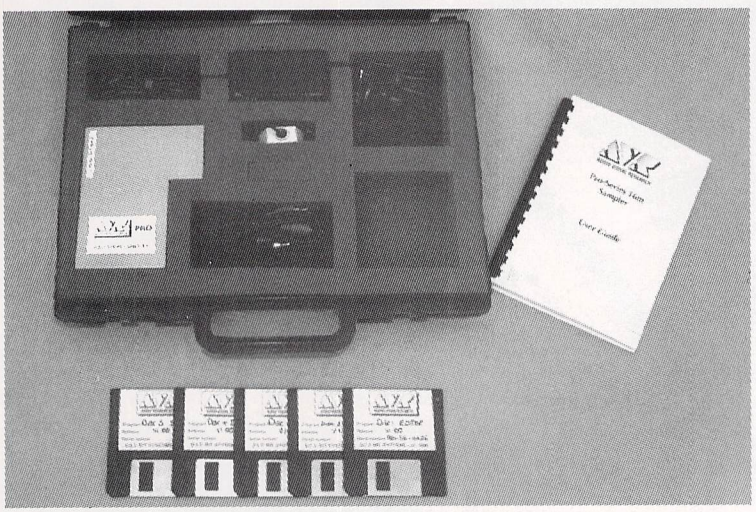
The shadows of the shots are now drawn before everything else, making the whole thing look far more convincing. The sprite routine has also been changed to return 1 if the sprite was on screen and 0 if not, making it possible to kill a shot off as soon as its shadow goes off screen. This makes the shot structure available the next time the player presses the "Fire" button.

Text

A Text function has been added for printing the score and the "game over" message. It is a fairly boring routine but it does use the `movep` instruction. `movep.l` takes a long time and puts the highest byte (bits 24-31) at the specified address, takes the next byte (bits 16-23) and puts it at the address+2, takes the next byte (bits 8-15) and puts it at the address+4, and takes the lowest byte (bits 0-7) and puts it at the address+6. This rather weird instruction can set eight pixels of a low resolution ST screen in four planes at once, which means that you can draw a whole 8x8 character in nine instructions! Just for fun try asking an Amiga 68000 programmer if he's ever used the `movep` instruction. ***stf***

■ **That's all for this instalment. Be here next issue when we wrap up the series!**

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AUDIO VISUAL RESEARCH

This month, the popular Roland range of synths are scrutinised by Vic Lennard

MIDI helpfile

How do you do what you do?

■ After using a Roland D5 for many years, I now have a D110. I understand that these work in almost the same way, but not quite. What do I need to know? Can I use the new synth exactly like the older one?

Let's start with the basics: how do the Roland D5/10/20/100 series of synths work?

A basic sound is a *Tone*. Each Tone is made up of up to four *Partials* or part-sounds along with a Common block. This controls the way the Partials are put together (Structure) along with the Mutes, Envelope Mode and Tone Name. A selected Tone together with the Key Shift, Fine Tune, Bend Range and Assign Mode functions is called a *Timbre*, of which there are two banks (A,B) of 64 each.

There are eight *Parts*, each of which has an associated Timbre. A *Patch* is a selection of eight Parts along with their Output Level, Pan, Key Range, MIDI Channel and Partial Reserves. It also includes the *Rhythm Part* with its Output Level, MIDI Channel and Partial Reserve. The *Reverb* settings affect all Parts. This is a little confusing because there are 255 Tones on-board (128 preset, 63 rhythm and 64 user) and MIDI Program Change commands are able to access only 128 of these.

Maximum polyphony is 32 Partials. Each Tone can use one to four Partials, making the actual note polyphony impossible to calculate unless the precise Tones in use are known. Even then, drum tones take either one or two Partials (Quijada takes three) – who keeps a list of what drums are playing where?

The D5/10/20/110 can recognise various MIDI Controllers: Modulation (#1), Volume (#7), Pan (#10), Expression (#11), Hold (#64). The D5 also recognises Breath Controller (#2) – rather unusual for a Roland piece of equipment. None of the keyboards can generate Aftertouch or transmit MIDI Volume (#7).

The internal addressing of the D5/10/20 is practically the same. The D5 doesn't have reverb but has dummy values for those parameters which are reverb oriented. However, the D110 has its Patch data in a different position in memory. The difference is that while the D5/10/20 has blocks for the Patch data per Part, the D110 has one block for all Patch data.



■ The E5 is one of the newer synths from Roland. What about the oldies?

The Model ID for the range is 16H, which means you should be able to transfer User Tones and Timbres between the various models and Patch data between D5/10/20. They also have the same Preset Tones.

The MT-32 also has the same Model ID but here there are significant differences. Tones are called Timbres (64 internal and 30 rhythm) while Timbres are called Patches! Also, more importantly, the addresses don't line up, so direct transfer is not possible.

All change, please

■ I understand that many edits on the Roland MT-32 can be made by System Exclusive, including changing the MIDI channels for each part. How is this done?

There are many edits which can be made via sysex and changing the MIDI channels follows. You need to be able to send the necessary bytes and this can often be done from the event edit page of a sequencer. If you can't write sysex directly to your sequencer, then find someone who can, set up the various messages and save them onto your sequencer. You can then use these at startup to set the MT-32 in the precise way you wish.

Sending a sysex message to most pieces of Roland equipment requires a checksum to be calculated. Without going into too much detail, adding 1 onto the parameter being changed subtracts 1 at the same time from the checksum. The basic format is:

```
F0, 41, U, 14, 12, aa, aa, aa, dd...
dd, cs, F7
```

– all in hex. 41H is Roland's ID, 14H is the Model ID for the MT-32 and UH is the Unit Number which can be found in the "Unit Number Setup Mode." 0-31 is displayed and relates to 1-20H. 12H tells the MT-32 that it is about to receive data, aaH,aaH,aaH is the place (address) within the MT-32 that the data is to go, ddH....ddH is the actual data and csH is the checksum.

Changing MIDI channels:

```
F0, 41, U, 14, 12, 10,
00, 0C+p, n, 64-p-n, F7
```

– where p is the part number (1-8, Rhythm=9), n is the new MIDI channel (1-16 = 0-FH, off = 10H) and 64H-p-n is the checksum. So changing part 4 to MIDI channel 10 (or 0A in hex) would be as follows:

```
F0, 41, U, 14, 12, 10, 00, 0C+4, 0A,
64-4-A, F7
```

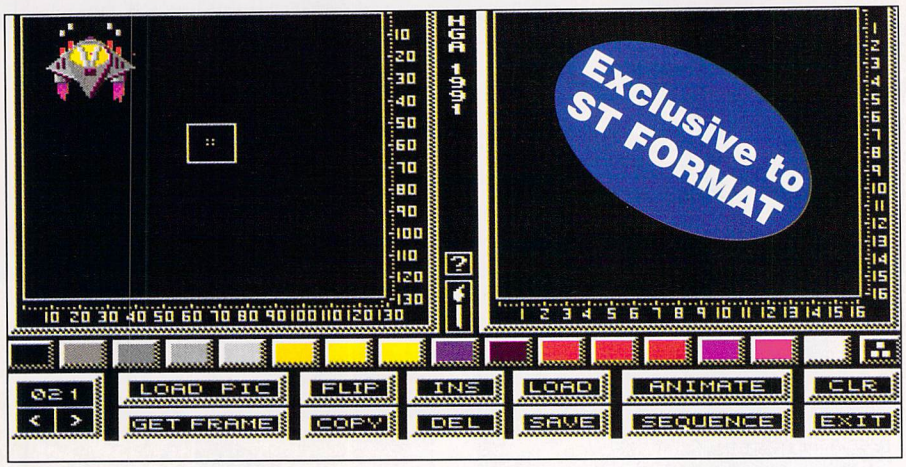
– which is `F0, 41, U, 14, 12, 10, 00, 10, 0A, 56, F7.`

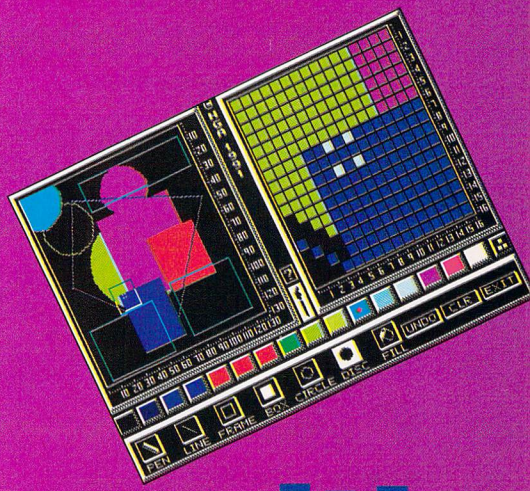
You can also use the above for the MT-100, which is effectively an MT-32 with a PR-100 sequencer. The only difference is that the Model ID is 16H instead of 14H.

Did you know you can select a timbre for each rhythm note along with an output level, pan and reverb on/off? Let us know if you're interested in this and we'll feature more on it. ***stf***

GOT THE MIDI BLUES?

Whether you're having trouble with your setup or your software, Vic Lennard can help answer all your MIDI queries. For only £34.50, you can join the UK MIDI Association (☎ 081 368 3667) and get UKMA's monthly newsletter *MIDI Monitor,* plus free on-line support and advice. Alternatively, you can take advantage of Vic's MIDI expertise by writing to him at MIDI Helpfile, *ST FORMAT,* 30 Monmouth Street, Bath, Avon BA1 2BW. Please include full details of your MIDI setup and a diagram if you can manage it. Sadly, Vic can't reply to queries individually, only in these pages.

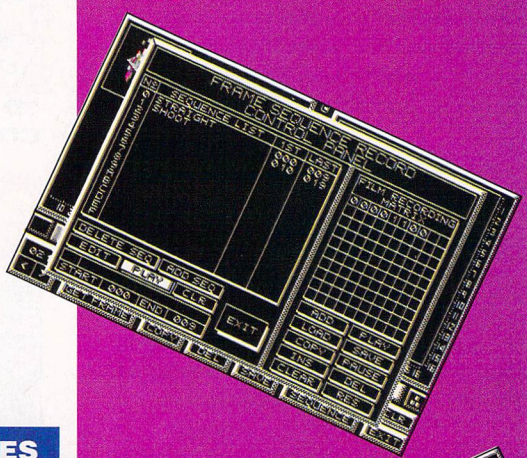




Get animating with Animaster!

"Potentially the best ST animation package"

– Peter Molyneux, creator of *Populous* and *Powermonger*, after using last month's Cover Disk demo



That's what professional game-designer Peter Molyneux said about *Animaster*. You can't overlook praise like that when it comes from the programmer who created hit games like *Populous* and *Powermonger*.

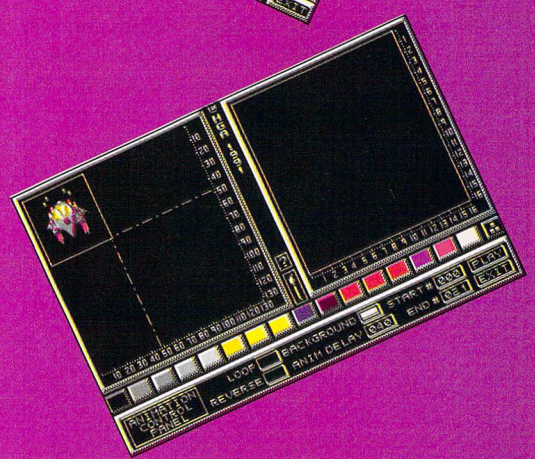
Animaster is *ST FORMAT's* exclusive and unique animation package which enables you to design your own animated sequences. You can create your own sprites in *Animaster*, load in backdrops and then make your characters run, leap or die over the top of them. Save your sequences to disk and then merge them together to build up a short cartoon. Using a *GFA Basic* program supplied as part of *Animaster*, you can even incorporate the sprites into your own BASIC programs.

A taster of *Animaster* appeared on Cover Disk 21. The full version of the program enables you to create and edit your sprites using a range of drawing tools. You can then test them over the top of a background to see how they look. What's more, *Animaster* even makes use of the enhanced features of the STE, offering you a choice of 16 colours at a time from a staggering palette of 4,096.

Using *Animaster's* powerful sequence editing features, you can construct a short "film." For example, define a sequence showing a little man running, then another showing him leaping and yet another showing him bending down and touching his toes. Using a special recording matrix, you could then define a "film" which shows the sprite running for a while, stopping to touch his toes, running again and then leaping into the air. Imagine the possibilities for a Superman sprite or a colourful Mickey Mouse!

ANIMASTER'S FEATURES

- Runs on any ST or STE, with support for the STE's extra palette of 4,096 colours
- Automatic creation of a special mask to use your sprites in *GFA Basic*
- Single or multi-frame "grabbing" from pictures created in a paint package
- Eight times magnification for close-up editing of your sprites
- Extensive sprite drawing and editing features
- Comprehensive testing features
- A unique sequencer enables you to define up to 16 animation sequences which can then be animated over a blank screen or any picture of your choice
- A "Film Matrix Recorder" enables you to record, edit and save a sequence file to disk



ANIMASTER PRIORITY ORDER FORM

☐ Yes, I would like to order .....copies of *Animaster* at the special price of £14.95 (ref: ST367)

Note: *Animaster* is only available through *ST FORMAT*

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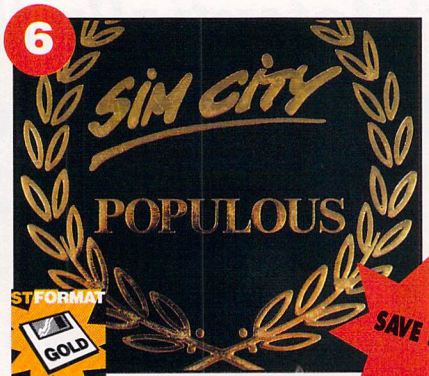
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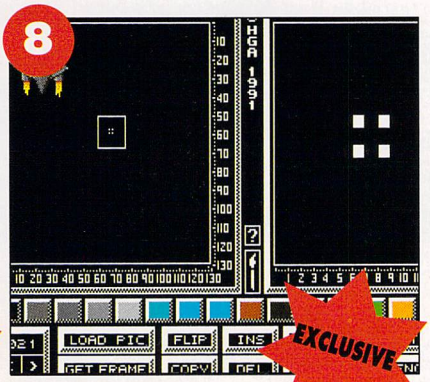
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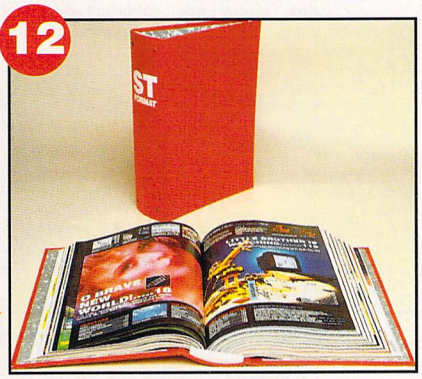
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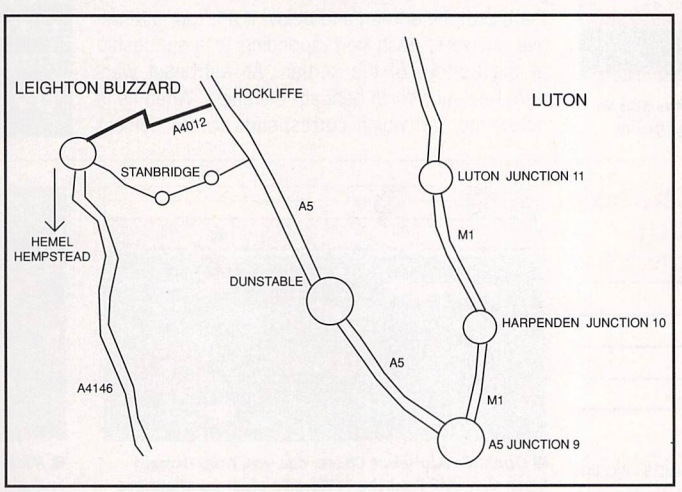
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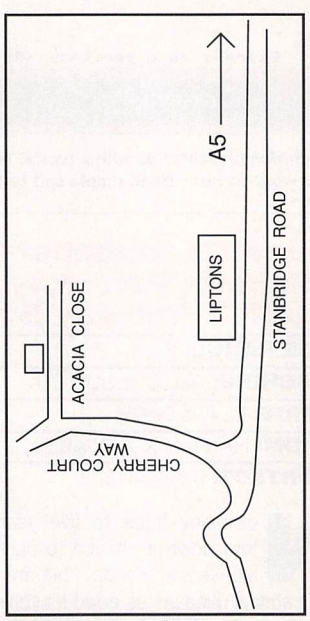
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Maths Blaster Plus

AGE RANGE: 6 – 12
MACHINE: ALL COLOUR STs
PRICE: £34.95
FROM: ABLAC COMPUTEC LTD
CONTACT: 0626 332233

The only one of a dozen programs in the Davidson/Ablac catalogue to be converted for the ST, *Maths Blaster Plus* is another US import to hit the edsoft shelves. But does it warrant its hefty price tag? At £34.95, it isn't cheap, but for your money you get five related maths programs, a full on-screen editor and a record keeping facility, a comprehensive 52 page manual and a five year warranty.

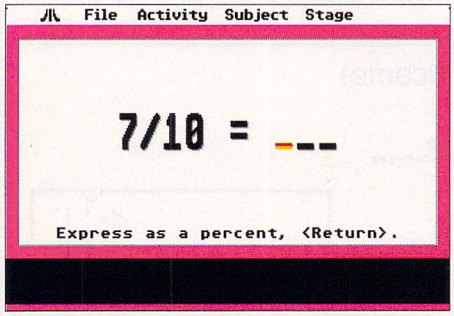
Once the program has loaded, you can set its parameters from a selection of pull-down menus. These offer various options: you can set the level of the games (there are six available), the types of sums to be presented (addition, subtraction, multiplication, division or fractions) and how they are to be displayed (vertically, horizontally or mixed).

In addition to using pre-defined databases, you can also use an editor to enter your own data and save it to disk. This means you can tailor the program to the needs of individual children. Finally, you can keep records of children's progress and save them or print them out. You select from the five games via the large on-screen icons.

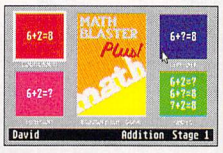
The first four games are variations on a theme. *Countdown* is the easiest. A sum or calculation is shown on-screen. Press the Spacebar and the answer disappears. You must now re-enter it from the keyboard. *Ignition* is virtually identical except that the answer does not appear in the first place. In *Lift-off*, part of the question is missing and you must enter it. In *Orbit*, parts of the questions and answers have become muddled up and must be re-arranged.

The final segment is a simple arcade-type game called *Blasternaut*. A question appears at the top of the screen and below it are four alternative answers, each corresponding to a spaceship at the bottom of the screen. An astronaut wanders back and forth beneath the ships. When he is below the one which corresponds to the correct answer, you must press the Spacebar. If you are right, the ship takes off. If you are wrong, or simply too slow, the answer flashes on the screen. Occasionally, you get the chance to pick up a bonus by catching a floating spaceman.

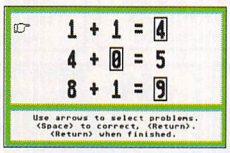
The programs in *Maths Blaster Plus* are simple but effective. With the range of parameters in the simple to use set-up sequence, there are 180 different combinations of questions. This can also be vastly extended using the program's editor. This, along with the comprehensive record-keeping facility, should make *Maths Blaster Plus* a first choice maths tutor for teachers and parents of primary school children. Recommended.



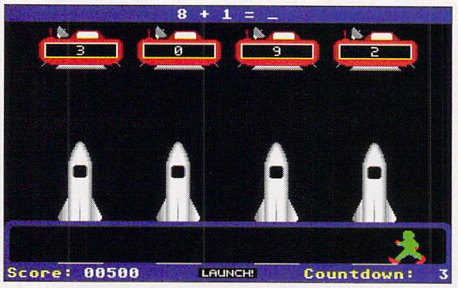
■ ***Ignition*** **presents you with a typical** ***Maths Blaster Plus*** **work-screen – clear, simple and to the point**



■ **A welcoming menu to a substantial program**



■ **Sort the sums out and you have** ***Lift-off!***



■ **Answer the sum correctly in** ***Maths Blaster Plus*** **and blast your little astronaut character into space!**

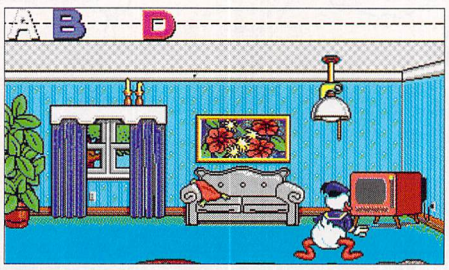
GRAPHICS	**8**
VALUE FOR MONEY	**9**
LONG TERM INTEREST	**9**
EDUCATIONAL VALUE	**9**
OVERALL	**91%**

Donald's Alphabet Chase
Mickey's Runaway Zoo
Goofy's Railway Express

AGE RANGE: 2 – 5
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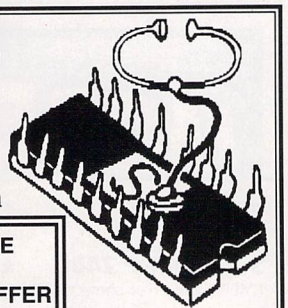
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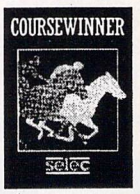


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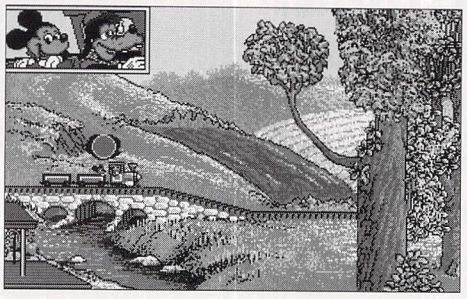
in a different room of Donald's house. The first screen, for example, shows Donald's lounge and contains the letters A, B, C and D. One of the outline letters flashes and at the same time a jolly little cartoon version of the same letter wanders around the room. You must help Donald catch it by entering the appropriate letter from the keyboard. Once you find the sequence of letters, you move onto the next screen (there are six in all).

The sprites are lively and interesting, and the letters get up to all sorts of mischief – jumping in and out of the bath, for example, as well as hiding in cupboards, under beds and so on. The background scenes (and Donald himself) are marvellously cartoon-like, but then again, you wouldn't expect anything less from Disney.

If you don't enter the correct letter, Donald shows his frustration in various ways – usually he just jumps up and down on the spot with a very angry expression on his face. When you enter the right letter, however, Donald catches hold of the wayward sprite and throws it to the top of the screen where it remains. After every screen you're also treated to a rather poorly played version of a nursery rhyme.

After you've got it all right, the final scene is pure Disney magic: Donald is slumped sleepily in his favourite armchair when the letters creep up behind him. All of his work has apparently been in vain! There's only one thing to do – tidy up again!

Children are initially very enthusiastic about *Donald's Alphabet Chase*. They like the cartoon quality of the game but soon become bored with carrying out the same process time and time again. For once, it seems that playing the game is less fun than watching and laughing at Donald's reaction to chasing letters that just don't want to be caught. Educationally, the best that can be said is that it is inoffensive. You could use it to reinforce a knowledge of upper case letters and possibly even the position of their respective keys on the keyboard. But why just concentrate on upper case letters? Children are taught lower case variants first.



■ ***Goofy's Railway Express:*** **all aboard Goofy's express to discover a few different shapes**

In *Mickey's Runaway Zoo*, Mickey Mouse becomes a nursery maths teacher. All the animals have escaped from the zoo and are hiding at various locations around town (there are a total of four screens to work through). Your job is to recapture them.

First, it's off to the park. The numbers one to five appear at various places and occasionally a number flashes. When it does, you must enter that number from the keyboard. The relevant number of animals then come out of hiding and run (rather too willingly – they have escaped, don't forget) into a caravan that Mickey and his hapless companion, Goofy, are trailing around behind them. At this point, you should be encouraged to count the animals into the caravan to reinforce the number that you see on-screen. The animals are all superbly drawn and range from slithering snakes to jolly jumping bears.

This is, again, a beautifully presented program, but it is sadly insubstantial. The children we tested the game on were far more interested in the graphics and the results of getting the questions right than in the questions or even the numbers themselves. If they see the number "7" on the screen, they can simply see the same shape "7" on the keyboard and then press the relevant key. They don't have to count to get the questions right – they just have to look for similar shapes. One three year-old we tested, while glued to the screen watching squirrels wandering into the caravan, still didn't know how many animals there were. "Er, seven," he guessed. Wrong – he had just pressed "3."

Mickey's Runaway Zoo, despite exceptionally pretty backgrounds and sprites, is lightweight stuff. Recognise the shape of a number, tap it in on the keyboard and you're away. Nothing as tedious as counting is needed here.

In *Goofy's Railway Express*, Goofy's express rattles through the countryside with Goofy and Mickey at the helm. You can see their faces in a box in the top left of the screen. Get things right and they smile – or sometimes gasp in amazement. As the steam loco puffs along, it occasionally sends out a shape from its smoke box. When this happens, you must press the Spacebar.

If you do this in time, the shape turns into an object which forms part of the scene. The results here can be superb: a semi-circle may turn into an umbrella which helps to support a tight-rope walking duck, for example, or a circle might become a snake, a triangle the sails of a yacht

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and so on. For all the graphic excitement, however, your interest is not kept for very long. Because you aren't involved very much in the game you soon tire of even pressing the Spacebar and seeing what happens. As with *Mickey's Runaway Zoo*, you don't have to know any facts to complete the game. Every shape is simply a shape. There's no need to know that it's a square, a circle or whatever. Despite the fact that the shapes generally turn into fascinating and beautifully drawn objects, within five minutes the kids we tried the game on lost interest, leaving my study strangely quiet and devoid of children.

Goofy's Runaway Express is the poorest program in the series. You can complete the game in a matter of minutes even if you can't recognise (or even see!) the shapes. Pretty, yes, but educational? Not really.

If you gauge quality by superb cartoon-like graphics and ease-of-use, then you can't fault these three programs. Educational software should, however, go much further than this. It must involve and absorb children. Most importantly, it must teach as well as entertain. Disney have certainly fallen well short of the mark with these three releases. Pretty graphics using familiar characters are simply not enough to make educational software. If Disney think that it is, then they are simply being too complacent.

GRAPHICS	**9**
VALUE FOR MONEY	**4**
LONG TERM INTEREST	**3**
EDUCATIONAL VALUE	**3**
OVERALL	**58%**

Mix and Match

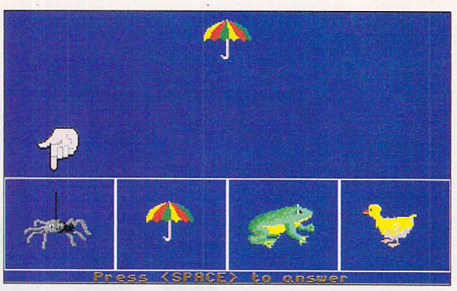
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FROM: SCETLANDER
CONTACT: 041 357 1659

Mix and Match is a pre-school shape recognition program and comes with a 12 page manual. Not that you need it – the program is simple to use: just select a game, choose the type of pictures you want and away you go. *Mix and Match* aims in terms of the National Curriculum to "help children... achieve competence in parts of attainment target 2 (reading) and attainment target 4 (spelling), level 1." A pretty bold claim. Does the program live up to it?

Mix and Match consists of three very similar games: *Two of a Kind*, a shape matching game; *Odd One Out*, a shape recognition game; and *Forget-me-not*, which encourages memory skills. For each game, you have the choice of pictures, shapes, numbers or letters.

In each game, four objects appear in boxes at the bottom of the screen. A hand moves between these and points for a few seconds at each. When it is over the correct one (in *Two of a Kind*, for example, the one which matches an object at the top of the screen), you must hit the Spacebar. Get it right and you're rewarded with a tick; get it wrong and you receive a cross.

So does *Mix and Match* live up to its claims? Unequivocally, no. It certainly isn't the finest available and it's debatable whether it fulfils any slice of the National Curriculum. It's far too simple to keep children interested for more than a few minutes. Like many edsoft programs on the market, *Mix and Match* fails to take advantage of many opportunities. Why doesn't it, for example, offer the name of an object or its starting letter and ask you to search for the relevant item? Alternatively it could provide children with simple counting exercises to complete numerical puzzles.



■ **Match the objects in Scetlander's *Mix and Match***

There are two saving graces: a parent/teacher section, enabling you to keep a record of a child's progress, and a separate graphics editor (£24.95 from Scetlander) to customise the shapes, letters and so on. However, if you want a shape recognition program for your child look in the catalogues of Softstuff and Europress Software instead. These also offer other programs covering several skills in a single package. ***stf***

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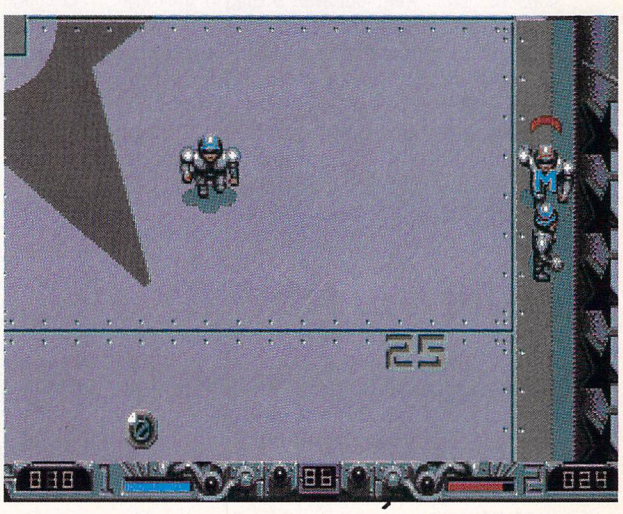


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Feedback

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Service with a smile

I am writing to inform you about an exciting facility which is provided by the Library Services Department of Monklands District Council.

Whifflet Computer Centre was formally opened in October 1986 to provide the residents of the district with the opportunity to access computers free of charge. The computer centre houses a wide range of micros with complementing software. The total number of bookings for these machines over the last quarter (May-June), was an astounding 3,314!

During its lifetime the ST centre has organised many computing activities, including primary school visits for BASIC instruction, formal classes covering all aspects of computing, an adventure games club, a *Kick Off* league and various competitions.

James Aitchison
Coatbridge

stf *It's always encouraging to hear of new ways of utilising the ST's extraordinary features. This month's report on those business card boxes in Littlewoods and the Post Office (page 99) showed how one company manage to make money out of a simple ST DTP setup. Then there's Mike Marchant on page 94 who's using the ST to revolutionise the advertising business. If anyone knows of other interesting uses to which the ST is being put, then drop us a line. We're always eager to listen.*

First aid for 3D kit

I recently purchased *3D Construction Kit* and although, on the whole, I found it an excellent package, I have two problems.

First I have trouble saving and re-loading data – directories don't have the files or are total garbage when you try to load data. With the aid of a disk copier I discovered that *3DCK* could save and load perfectly if a disk was formatted to 80 tracks, ten sectors per track and five sectors per FAT. This is a non-standard format.

Second, when using the Create Line function I find that *3DCK* appears to crash, for no reason – either displaying an ME error or simply refusing to respond to any selected controls.

B Sanchez
Luton, Beds

stf *We spoke to Domark's Clare Edgeley on your behalf and she informed us that early versions of* 3DCK *went out with a bug in the disk control section. Domark confirm that you seem to be suffering from similar problems and advise you to return the program to their Development Help Service where they will replace it with v1.2. If anyone else is experiencing problems, contact Domark (☎ 081 780 2222). You can also get the most up-to-date version of* 3D Construction Kit *direct from us and at a bargain price too – see page 120.*

Will it or won't it?

I own a 1040ST and I'm seriously considering selling it and purchasing an STE. I am confused, however, about what software (and possibly hardware) is compatible with the 1040STE – I have read many articles and heard many stories from fellow ST users.

One thing that concerns me is that in issue 4 of *ST FORMAT* you printed an article on the STE which claimed that a few software titles didn't work with it. One of these was *1st Word Plus* and this is the main word processor I use. Can you tell me the truth about what will and won't work?

Robert Tomlin
Chasetown

stf *As yet there is not enough software which utilises the enhanced features of the STE to justify trading in your ST for an STE. This is obviously going to change as the months pass and Christmas should spawn a new wave of STE software – particularly in the games field.*

The initial problems with incompatible software are now resolved and updated versions of the majority of titles have been released. Electric Distribution (☎ 0480 496789) have released a version of 1st Word Plus *which works on the STE. If your version of* 1st Word Plus *doesn't run on the ST then contact Electric and they'll be happy to replace it. The procedure is the same for any incompatible software – including games.*

PD from where?

Having just read your August issue, I felt the need to write to you concerning Mr Judd's letter. Through *ST FORMAT's* Public Domain section we have purchased some 400 Public Domain disks and have obtained these from most of the PD libraries who advertise with you.

I must agree with Mr Judd's letter. It seems that *ST FORMAT* does lean towards certain PD libraries and these do appear to be the largest and most expensive!

However, all the PD libraries that we have dealt with have given us some very good service, no matter how big or small. Some of the best are LAPD (average delivery: 36 hours), Computer Connections (average delivery: 6 days), Akore (if they take more than a week to deliver they apologise) and the ST Club (two weeks on average).

After looking at about only a quarter of the PD disks I've purchased, I can fully recommend PD disks to your readers. Learning about PD libraries through *ST FORMAT* and using the Mail Order pages was certainly the right course of action for this newcomer.

R C Whitehurst
London

stf *We do not discriminate against any PD libraries who, to our knowledge, operate a legitimate business. In reviews we simply state where our review copy of a program came from. The larger PD Libraries tend to send us more disks than their smaller counterparts because they can run a more efficient operation and can afford the expense of sending out review copies.*

Since most of the PD Libraries sell the same programs, it's not uncommon for us to receive the same disks from several sources – we actually received 35 copies of Llamatron, *for example! The bigger libraries often have the* ➤

SHORT BUT SWEET

If you can fit all you want to say on a postcard, just send it in

■ I would like your advice on purchasing a modem and emulator. I want to be able to log on to Prestel. I am hoping to use this to answer marketing questionnaires.

Tudor Boddam-Whetham, Glos

– Communications, more than any other application, is loaded with techno jargon. Back in issue 23 we took a detailed look at the whole subject of comms, exploring the equipment you need and explaining away all the jargon. Turn to page 110 if you missed it.

To log onto Prestel you need a modem and the appropriate software – you don't need an emulator. When choosing software make sure you find a package which offers Viewdata mode (like Atari's FaSTcom, *£49.95 ☎ 0753 533344). Most modems will do – just make sure they work at 1200 baud, all you need to get onto Prestel.*

■ Are there any reasonably priced score-writing programs available for the ST? *C-Lab Notator* is out of my price range, I'm afraid, so which is the cheapest notation program?

A Clough, Leeds

– We're working on a scoring feature at the moment. We're seeking out the cheapest of the ST scoring packages and exploring the range of features you should be looking out for. Make sure you get your hands on the November issue before buying. Alternatively, turn to page 110 and guarantee a copy.

■ I have a 520 STFM which I bought in 1987 with an ST BASIC Language disk. I am confused over STOS – is it built into the computer or is it another programming disk?

Edward Barnard, Kent

– STOS is a games programming language which enables you to quickly and easily write your own games. It is a separate package, comes on a separate disk and is available for £29.95 from Mandarin Software ☎ 0625 878888. Alternatively, check out this month's Mail Order section, page 120, for a special offer on a complete STOS set.

■ After finding out that my 520STFM's drive is single-sided, I looked round for a double-sided drive but they cost £80. Do you know where I might obtain one more cheaply?

D Clayton, London

– Power Computing (☎ 0234 843 388) are offering good deals on internal drives at the moment, but if you can manage it I'd advise you to hang on for a while. In the November issue of STF, *we're doing a detailed roundup of all the external and internal floppies you can get your hands on. We're even looking at what you can do with your old internal drive after you've taken it out. If you want to make an informed choice, it's worth waiting for.*



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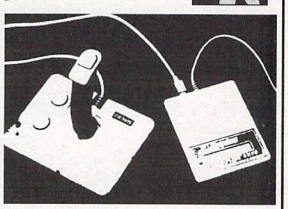
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contacts which enable them to get scoops like this early on. We therefore quote them as suppliers because they get the program to us first.

I'm glad you find PD disks useful. They offer an easy insight into every subject you want to experiment with – from DTP to spreadsheets – and they're cheap too. If you find the programs useful you can go out and invest in their professional counterparts at a later stage. I always ensure that our features have as much of a PD perspective as possible. This offers readers an easy entry into all sorts of applications. Keep with ST FORMAT *and I'm sure you'll agree.*

Get into PD

My friends say that Public Domain disks are written by students who deliberately put viruses on the disks. Is this true? Also, I have written a program that I would like to put into the Public Domain. Do I sell it to a PD Library or do I put it out as Shareware?

Barry Mitchelson
Kent

stf *Anyone can put a program into the PD but the responsible PD libraries check the disks they distribute to make absolutely certain they aren't infected. If you're in any doubt about whether the PD library you're using checks for viruses, give them a ring and ask. And of course you should always follow the advice in our virus feature this issue, beginning page 30.*

Concerning your program, the whole concept of Public Domain is that it's free of charge. In your case, the benefit of putting your program in the Public Domain is that you're more likely to get noticed. Games houses are known to have discovered excellent graphic artists from demo writers and many professional programmers started off working on PD utilities. Simply making regular contributions to the PD library can be a useful addition to your CV.

If you really want to make money from your programs you could negotiate a Licenceware deal with a PD ILbrary. This means the PD Library has to pay you a royalty on each disk they sell – Budgie disks work in this way.

Alternatively, you could consider Shareware. This is a more attractive for the PD Libraries but it sadly hasn't really taken off in this country. This is where anyone who gets enjoyment from your program is encouraged to send you £5. In return, you keep them informed of any updates. The excellent Llamatron *on Cover Disk 24 (see page 110 if you missed it and want to get hold of a copy) is Shareware and Jeff Minter says he's received hundreds of pounds from all the people who loved the game.*

Sound for business

I have written a number of sound modules with *TCB Tracker*. It occurred to me that I might be able to sell these to software companies so that they can include them in their games. Are there any software companies that do this?

Benjamin Eldridge
West Sussex

stf *Game music is very often written by separate freelancers, Benjamin. Usually, the programmers consult with a soundman and decide between them what sort of music they want to use. To get noticed, you ideally need to visit some of the big shows where you can find exhibitions run by the software houses. The best of these is the annual CES show. This is taking place at Earl's Court 2 between 5 and 8 September.*

Here you can chat to some of the many Product Managers who can point you in the right direction as well as suggest changes you can make your music. You should expect to be paid according to your musical experience, past history and the usefulness of your sounds.

If you intend to walk away with megabucks in your pocket, then you'll have to be another Bomb the Bass and writing for the Bitmaps. Depending on how versatile you are and the teams you work with, you might eventually be able to give up your day job – but don't bank on it.

Narrow the age gap

Thank goodness for *ST FORMAT*. As a grandfather with a grandson who's seven years old, I was exploring the possibilities of acquiring a computer for the lad to use at home.

I had decided on an Atari machine, but I could get very little help from any of my local High Street traders. They at least had the good sense to recommend *ST FORMAT*. From reading your July edition, and particularly your review of the Family Curriculum Pack, I have been able to draw up a provisional specification of the hardware and software needed to get my grandson launched into computing.

An Atari 1040 STE with 2MByte of RAM and 1MByte Disk Drive
A Philips 8833 mk 2 colour monitor
GEM Desktop
Let's Spell from Softstuff
1st Word Plus word processing package
A colour drawing package
A maths package
A games package

This is going to cost around £750. Have I specified a reasonable system for a seven year old? Are there any major problems or glaring omissions?

P B Carr
Dorset

stf *I wish I'd had a grandfather like you. First of all, unless your brother's Sam Tramiel (the boss of Atari US), I doubt whether you could pick that lot up for £750. A 1040 STE comes with 1MByte of memory installed and this is more than enough for your needs. You may eventually find that you need a second floppy drive for your system, but for the time being the drive in your ST is good enough. All new STs come with 1MByte drives as standard.*

A monitor is a wise choice but if you're looking to minimise costs you can always use your TV set. If you intend to play games on your ST then avoid buying a monochrome monitor because it's impossible to run most games with this. The GEM Desktop is already installed in your ST so you have nothing more to spend there.

You may find a printer useful, especially if you intend to make any serious use of a word processor. Check out last month's printer roundup for the best one for your needs. (Turn to page 110 if you missed it.)

Each month we review many educational packages. We suggest you watch these pages and check out our ratings before buying any edu-

W A N T E D !

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■ No stamp needed if posted in UK. Return to: ***ST FORMAT* September Survey, Future Publishing, Freepost, Bath, Avon BA1 2XF**

cational software. The Public Domain Libraries (listed on page 50) are also a good source of educational and other useful software. Contact them for a brochure and decide what you want.

The first steps into computing can be daunting because there's so much you need to understand in one go. Be patient. Once you've got over the basics it's all fun from there on.

Verbs *are* mastered

Many thanks for last month's review of *Verbmaster* which you awarded a rating of 85%. However, I must point out that *Verbmaster* does offer the facility to conjugate verbs fully. There are two separate sections to the program which are accessed from the initial alert box, one of which specialises in this field. I was disappointed to read the incorrect comment that "Academic Software would have to produce another package with slightly different aims" in order to offer this facility. In reality, this important feature is already there and we feel we have achieved our goal of making the program as versatile as we could.

David Furlonger
Manager, Academic Software

stf *It seems that the version of* Verbmaster *we reviewed didn't include the full verb conjugation facility. You did not inform us of the latest changes to your program in this case, but if details are made available in time we are always happy to print them.*

Not as good as Gold

Why is it that US Gold insist on turning their backs on the ST? We haven't set eyes on *Pool of Radiance*, *Buck Rogers* or *Medieval Lords*, just to name a few of the games which still haven't made it onto the ST. *Curse of the Azure Bonds* was supposed to be released before *Pool* but came out first instead. Are we ever going to get our hands on *Pool* now? Now SSI are refusing to write an ST conversion of one of the greatest games ever – *Eye of the Beholder*. Have they gone mad?

Simon Tero
Scotland

stf *We've been badgering US Gold to release* Beholder *on the ST for some time now. We sent your letter off to US Gold to get their official response and this is what Bob Malin, Senior Product Manager for US Gold, had to say:*

"Thank you for your letter. I, too, am an owner of a 520 STFM and as US Gold's Senior Product Manager for SSI would like to see their games on as many formats as possible.

"The simple fact is that Beholder *was designed in America for the American market whereas the programs you quoted (with the exception of* Dungeon Master*) were developed in Europe. The ST market in America is simply not viable – SSI sold 200 copies of their last release on the ST in America!*

"It also saddens me that the European market for the ST has declined in the two-and-a-half years I have been with the company – most particularly in France where we would expect 50% of our ST sales to be generated.

"Games with the depth of Eye of the Beholder *require high levels of investment, from which any commercial company expects a return (profit). SSI, on a global basis, does not feel that investment in ST code will give them sufficient return to make a commitment to the ST either now or in the future.*

"The good news is that SSI have licensed US Gold and Softgold in Germany to produce three AD&D titles on the ST. All three should be released in the next six to nine months.

*"*Shadow Sorcerer *is an introductory/intermediate level game using an isometric view (similar to* Heroquest*) and a great combat system that needs to be seen to be believed.* Citadel of the Black Sun *has a multi-level isometric view with a detailed combat system.* Greyhawk Adventure *(working title) is a hybrid system using* Beholder *graphics, Ultima-style character interaction and enhanced* Pool of Radiance *style combat, set in TSR's World of Greyhawk gameworld.*

"Each game will offer something new for AD&D computer games enthusiasts, and if, as you suggest, they will vote with their hard-earned cash, then there is an obvious incentive for US Gold and Softgold to reinvest that cash in sequels, and possibly (but don't quote me) an ST conversion of Eye of the Beholder.

"US Gold did not decide to release Curse *first. This situation was forced upon us by the inability of the development team doing the ST version to deliver* Pool. Pool of Radiance *is, unfortunately, another program that won't be* ➤

THOSE TOP TEN COMMON BUG BEARERS

❶ Why are the ST joystick ports in such an awkward position?

– Stupid design? Get hold of some handy joystick extenders. These short leads plug into the ports on the underside of the ST and you attach your joystick to the other end. These are essential if you regularly change joysticks. Microdeal (☎ 0726 68020) sell them for £6.95.

❷ How many colours can you get on an ST and how many on an STE?

– Both the ST and the STE show only 16 colours on screen at once. However, an STE can pick these colours from a possible 4096 choices as opposed to the 512 colours on the ST. Special drawing programs like* Spectrum 512 *(£29.95 Electric Distribution ☎ 0954 61258) and Quantum Paint (£19.95 Eidersoft ☎ 0268 541212) give you access to 512 and 4,096 colours respectively on an ordinary ST.

❸ What can I do if I buy from a mail order company then don't hear anything?

– The company are in breach of contract and you are entitled to your money back. If the goods were lost in the post you may have to claim from the Post Office rather than the company. Where possible, buy by credit card – for goods over £100, the credit card company is liable along with the seller for any breach of contract. We covered this subject in detail in our issue 21 supplement. To get your hands on this issue, turn to page 110.

❹ I want to write games. What programming language should I learn?

– Arcade games, more than any other program, make phenomenal speed demands on your ST, so you need to program in a fast language. Your best bet is assembly language – check out our assembly tutorial on page 113.

If you're only just getting into programming then try out a game programming language like* STOS. *Last month Titus released* Prehistorik *for over £20 and it was written in* STOS! *This is such a superb package that we've come up with a special* STOS *collection on sale in the Mail Order section, page 120.

❺ I want to replace my internal single-sided drive with a double-sided drive. Is there anything I can do with the single-sided drive?

– In our November issue (not far off now) we're conducting a detailed study of all the best floppy drives you can buy for your ST. We'll also be looking at how to fit an internal drive. Unfortunately, there is no standard internal drive connection, so you need to contact your local Atari dealer for advice on your particular drive. Another problem is that the internal drive has no housing, so you need to speak to your floppy drive supplier and find out if he's prepared to sell you an individual case.

❻ I'm having trouble getting my printer to print out correctly. I keep getting the wrong thing.

– It sounds as if you need a printer driver (the program that talks to your printer) tailored to meet your printer's specific needs. Scour the Public Domain for a driver which matches your printer model. In exceptional cases, Martyn Dryden from the Southwest Software Library can knock you up a printer driver specially for you. Check out our PD directory on page 50.

❼ Can I play games on an Atari mono monitor?

– Unfortunately not. Whereas a black and white television shows colour images in black and white, the mono monitor can only display images which were meant to run on a mono monitor in the first place. Sadly, the vast majority of games only run on colour screens, though occasionally some are written to run in both colour and mono modes (try out Electronic Arts' space strategy game.* Imperium *for a mono game). Serious DTP, wordprocessing and business packages benefit from being run an a high res monitor, so these programs support the mono resolution.* Calamus *(from Signa ☎ 0252 341600) only runs in mono res.

❽ I've lost important data on my floppy disk – can I get it back?

– Retrieving data from a damaged floppy is a tricky and time-consuming problem. However, back in issue 22 we brought you a feature on precisely this subject. With step-by-step guides and explanations of useful disk editing software, it was the definitive guide to recovering your lost data. For our back issue service, turn to page 110.

❾ Are you going to be doing an ST Shopper magazine?

– There are no plans at the moment to produce an ST Shopper magazine – though if enough of you want to see one, I'm sure that could change.

❿ When is *Railroad Tycoon* supposed to be coming for the ST?

– This mega railway sim is supposed to be here next month, and we're getting Captain Sensible to review it. Train-spotters' paradise!

seen on the ST. I will be visiting SSI in the near future and will discuss the contents of your letter with them. If only I had 10,000 more like it..."

Bob Malin
Senior Product Manager, US Gold

stf Eye of the Beholder *was programmed in C which is a very portable language. To convert it to run on an ST requires little more than a couple of months' work, including all the necessary testing. Electronic Arts are claiming that ST sales of* Powermonger *outstripped Amiga sales – surely this indicates that ST owners tend to buy the very best in games.* Eye of the Beholder *already has an established reputation and could confidently scale the charts. And with ST FORMAT's readership figures up by 26%, the number of ST owners is rising all the time. US Gold surely need no better reason to give us the game.*

Across the Atlantic

I am having a problem trying to communicate with my brother who lives in California, USA, and owns an Apple Mac computer. I am from Northern Ireland and own an STFM. I am using *Vanterm* and have set the baud rate and so on, but when I try to make contact, or my brother tries to contact me, all we get is the phone ringing and then a "No Carriage" signal.

J E McKillen Esq
Co. Down, Northern Ireland

stf *American systems work with a different protocol to the UK system. Over here we use a communication protocol known as CCITT, whereas in America they use the Bell system. Check that your modem is configured to operate in Bell mode before giving your brother a call. Remember that there are bound to be connection problems arising from calling such a distance. If you think your difficulties lie with line noise then get in contact with British Telecom and ask for their assistance.*

Spot the difference

What is the difference between an STE 4MByte machine and a Mega ST 4MByte machine? I have seen the 4MByte Mega ST advertised for almost twice the price of the STE 4Mbyte (£800 compared to just over £400).

R Williams
Ilford, Essex

stf *A Mega ST comes with a far superior keyboard and a separate unit for the main computer. It seems likely that the 4MByte STE is simply an ordinary STE upgraded to 4MBytes. Memory upgrades on the STE are fairly inexpensive to buy so this price difference seems about right.*

No viruses here

A Mr Robinson of Coatbridge (page 142 of the July issue of *ST FORMAT)* states he has been buying the magazine for some time and has found a number of viruses on the Cover Disks. Perhaps we could compare notes because some of his problems may be self inflicted without him being aware of it. I have made a few basic ground rules he may like to adopt.

The Cover Disks are always virus free! When I receive the Disk I always try the programs out on a spare disk one at a time. Be careful with word processors and databases – data can occasionally be lost or corrupted when you save, sometimes producing a load of garbage. You may think you have a virus when it could be that your program has just a head fit on your floppy!

Always format your disks to the standard nine sectors and 80 tracks – anything else may produce a CRC fault or the dreaded warning that the file you want cannot be found. Beware of deleting old files: this can produce unexpected results. Keep backups of your disks too.

When the July Cover Disk's side 2 turned out to be faulty, I sent it to Discopy Labs and it was returned after about a week. Well done! I'm impressed!

G S Papworth
Hitchin, Herts

stf *I'm glad to hear that our Cover Disk replacement service was so fast. The aim of this month's virus feature (see page 30) is to make sure everyone knows exactly what harm viruses can and cannot do. Treat them the right way and they can be harmless little blighters. The myth that computer viruses are actually living things has perpetuated many confusions. I hope that after this issue all our readers know what they should be doing if they encounter any problems.* ***stf***

IT'S JUST NOT GOOD ENOUGH!

If you have any complaints regarding the advertisers in the magazine then address them to Advertising Complaints, *ST FORMAT,* 30 Monmouth Street, Bath, Avon BA1 2BW.

Keep your complaints brief and to the point. We can't promise to get your problem sorted out but we'll contact the company concerned on your behalf and do our best to help

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Over two years ago New Computer Express described our newsletter: "To call it a newsletter shows a terrific amount of modesty on their part...It really is packed with information, with more concentration on the serious side of the ST." ST Applications is a complete re-design of The ST Club Newsletter that has grown to 3,500 subscribers since we started it four years ago. Each monthly issue runs to at least 60 A-4 pages. If you would like to subscribe or receive an evaluation copy please complete the form below.

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Our collection of PD and Shareware disks runs to over 2,000 disks and we guarantee same day dispatch on all orders. Our Free Catalogue - (46 pages A4) details these disks and all of our products and services: Books, Budgie disks and laser printing. We also publish: Astronomy Lab (£19.95), Key Master (£6.95), Oxford Chess (£9.95), Molgraph (£12.95), Guides to Timeworks DTP (£9.95), and 1st Word (£6.95). Details of these are in our current catalogue. Write or telephone for your copy today.

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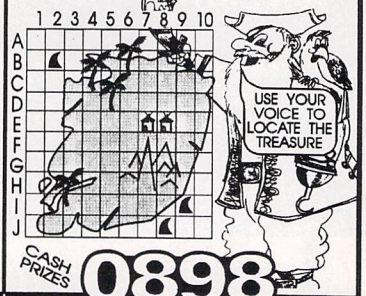


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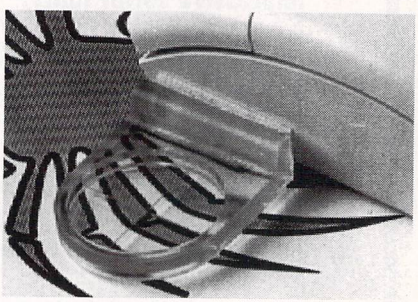
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COMPETITION

The ST FORMAT September quiz

Get down and be... er, trunky? It's "what a load of wacky questions, guv'nor" quiz time. Now that you've been lulled into a false sense of security, here's the toughest questions yet!

Listen carefully, I shall say this only in a bold Helvetica Black font. There's 20 questions on this 'ere page. All you've got to do is answer them. We do prefer correct answers, though we will be giving out a booby prize of a packet of Toffets for the silliest postcard. So if you don't *want* to win any of the fabulous prizes described opposite, think wacky!

1. Which programming team have just said goodbye to somebody called Gumbo?
2. What DTP package uses impressive vector fonts?
3. Name a program reviewed this issue which features the sampled voice of Bob Hoskins
4. What Sinclair Spectrum device can now be attached to your ST, thanks to a tip in this issue?
5. What new 3D game features little three-dimensional rabbits, fish and seagulls?
6. Which is more common: link or bootsector viruses?
7. Name the most common ST virus
8. Which company offer to eradicate viruses from any disks, completely free of charge?
9. Using the ST's Desktop, how much free space is available on this month's Cover Disk (to the nearest Kilobyte)?
10. Three giggling schoolgirls tried to win Wayne's heart with what new ST setup?
11. What does the ST-related term GDOS stand for?
12. What game tests out your skills as a surgeon?
13. What paint package does Mike Marchant believe is the most impressive for the ST?
14. The Supercharger SC-Plus PC Emulator runs faster than any other VGA emulator. How much faster?
15. Name the first of Delphine's unique adventure games
16. Name the only adventure game released to date by the Bitmaps, authors of this month's *Magic Pockets*
17. What's the simplest way to protect a floppy disk from virus infection?
18. In fractals, how many times can you magnify the Mandelbrot set and still see a different pattern?
19. What brand-new DTP package is following hot on the heels of *Proxima*, *PageStream* and *Calamus*?
20. Acme Interactive develop games for which software house?

Write your answers on the back of a postcard or envelope, name which prize you'd prefer, then send it to September Quiz, ST FORMAT, 29 Monmouth Street, Bath, Avon BA1 2DL. All entries must be in to our office by Monday 9 September

THE RULES BOX

1. All entries to the chillin' quiz must float into the *ST FORMAT* offices on an organic bap by 9 September.
2. Employees of Condor Trading or Future (the fastest bulging company in the country) Publishing and their families are not eligible to enter.(so there)
3. Don't even think about submitting more than one entry or we'll have our resident gypsy cast a very unpleasant spell on you causing your belly button to expand to the size of a space hopper
4. We won't give you any dosh if you win, or even if you don't, but you want the prizes anyway, right?
5. The Judge (don't know who that is anyway. I mean, I've been working here for over a year now and I've never seen a geezer in a white wig with a mallet under his arm strolling around) is, erm, final.

NEXT MONTH: THE *STF* PRICE GUIDE – *FREE* 24-PAGE BUYERS' SUPPLEMENT

WIN! WIN! WIN!

We've got a stunning prizette or two for you this month. There's a super-sexy Supercharger SC-Plus PC Emulator with a Super-VGA graphics board, worth £600, and a whole wodge of Chronos and Prism video packages, worth over £400, just waiting to be taken away

This month we've got two very special prizes on offer, courtesy of Condor Trading Ltd.

For the emulator fans out there we've got a *FORMAT* Gold winning Supercharger Plus PC emulator (given the massive rating of 92% in last month's issue). This 16MHz version of the board comes complete with 1MByte of RAM, giving you full multitasking. Condor are also giving away their Super VGA board, enabling you to use 256 colours on a 1024x768 screen. The board runs 60% faster than any other VGA card, so if you're serious about PC emulation you can't afford to miss it. In the shops, this complete setup would cost you £600 – but we're giving it away!

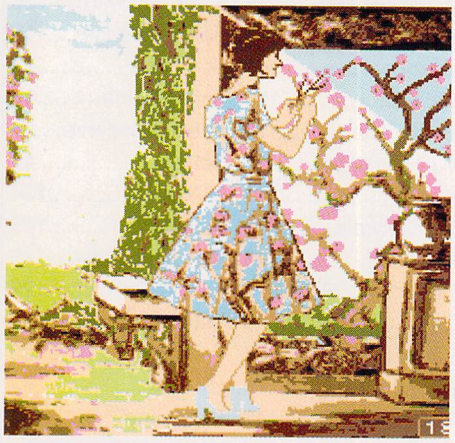
Then we've got a treat for anyone who wants to create the same astonishing animations designed by Mike Marchant for TV adverts (turn to page 94 to see what Mike can do with an ST). The first of these packages is *Chronos,* a sophisticated 3D animation package. Mike uses *Chronos* in preference to any other 3D ST animation packages. He's even testing it out for Condor and coming up with enhancements they can use in *Chronos 2* – expected next year. To touch up your animations, you can use the versatile *Prism Paint* with its vast range of drawing facilities – that's included in the prize as well!

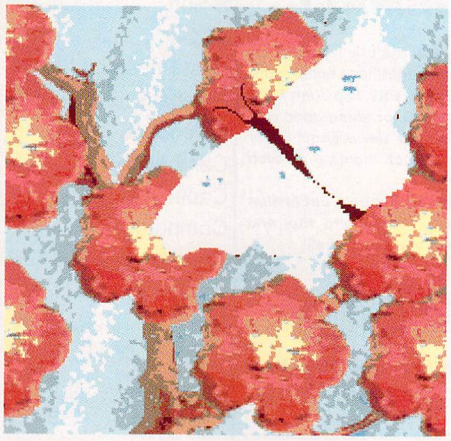
And there's more. Condor Trading are also giving away the complete range of Prism packages from American-based graphics giants Lexicore, worth almost £450, as soon as they become available. These comprise *Prism Render,* a comprehensive ray-tracing and texture mapping package, and *Rosetta,* an essential translator program, translating any ST graphic file to any format.

What's more, *you* can choose which of these fabulous prizes you want to win! What are you waiting for?



■ **This is the *FORMAT* Gold winning Supercharger PC emulator reviewed last month. It is a full AT emulator, housed in its own box. It comes complete with a whole megabyte of RAM, so multi-tasking is fully supported. What's more, since Supercharger sits in its own box there's available space to fit extra PC cards. All this could be yours!**





■ **Now you can create the same kind of professional animations as these on your own ST with the complete range of Prism graphics packages from American graphics giants Lexicore. The most exciting one of these is *Chronos,* a highly sophisticated 3D animation package which drives its competition into the ground**

THE AUGUST QUIZ

The answers to last month's quiz for four *FORMAT* Gold winning Panasonic printers were as follows. The winners will be announced next month. In the meantime, how did *you* do?

1. 1986
2. Simulations of the World
3. Falcon
4. *Crime Does Not Pay*
5. *Joust*
6. Tomorrow's World
7. Charity
8. Talespin
9. Memory Management Unit
10. 9KByte
11. ZX-81
12. Graphic Environment Manager
13. *Toki*
14. Bus Error ("No, you want the number 16, love")
15. *Magic Pockets*
16. AVR Pro-16
17. 25
18. MiG-29 Fulcrum
19. Jazzie B.
20. Reverses the mouse Y-axis

JULY WINNERS

Three Canon Bubblejet printers will be winging their way to: Douglas Trickett from Edinburgh, Brian Wyndham from Worcester and Clive Patey from London

***PLUS* GRAPHICS AND HARD DRIVES IN THE BIGGER *STF* – OUT 12 SEPTEMBER**

Twilight zone

Autobiography, autosuggestion, automata... there auto be a law against it

NEXT MONTH

There are big changes happening to your favourite ST magazine. We're moving up to a much bigger paper size *and* changing the layout of all the regular pages. This means we'll be able to squeeze even more of the ST information you want onto our already packed pages.

If the merest whiff of a game sends you scurrying for the Financial Times and a nice share index report, then you'll appreciate our business software roundup next issue. Spreadsheets, Databases, Accounts packages – it's all in there.

If you've been reading *STF* since December last year, you must have seen our last monster roundup of hard drives. Well, there have been wodges of new drives released for the ST since then, so we've decided to round them all up again – wagons ho, and all that.

Teasing little questionette for you: is fractal music (a) Lemmy from Motorhead singing in the shower, (b) a choir of Welsh lettuces or (c) whizzy music influenced by the complex goemetrical shapes pioneered by Benoit P Mandlebrot. The full answer next month.

Let's face it, joysticks are often a load of crap. They last about three months and then only operate in certain directions, usually failing on the last level of a really hard shoot-'em-up. We've got two superb new joysticks on review, which could quite easily be used in the cockpit of a 747 – sort of supersticks, really.

But wait, there's even more. Strapped to next month's issue there's a new Buyers' Guide detailing over 200 top buys for your ST.

So if you want to see how they – and the new, bigger *ST FORMAT* – measure up (inevitable ooer), be at your newsagent's door on Thursday 12 September. ***stf***

THE SECRET DIARY OF AN ST, AGED 2.75 YEARS

■ **Day One:** Goodbye, kind polystyrene, and hello, imitation oak desk. Today Mouse and I moved into our new home and met our new room-mates. Monitor's the same age as us, though Hard Drive and Joystick are battle scarred campaigners. They've been telling us all sorts of horror stories...

■ **Day Two:** He tried to use us today. He placed Manual over my ventilation slots and attempted to fathom the depths of Desktop, becoming dangerously maddened when the pointer kept turning into a bumble bee. His biggest problem seemed to be with running out of desk-space; rather than simply picking Mouse up and moving her back to a central position He tried stretching her cable as far as it would go, getting increasingly annoyed when there was no desk left

■ **Day Three:** I think He's got to grips with Mouse now, although the mysteries of write-protecting disks are still eluding him. Someone told him you could ruin your disks if you didn't write-protect them. He thought this meant you had to scribble something on the disk to let me know not to erase anything, so just to spite him I scrubbed everything on the language disk

■ **Day Four:** One of my ventilation slots is a bit wobbly, but apart from that I'm feeling fine. I don't think He liked my language disk erasing joke too much. Got my first real test today. He went out and bought a game, one that He was assured was excellent by the man in the shop. I didn't think it was much cop, but at least the old central processor got a bit of exercise. Anyway, He got bored with the game after about half an hour and starting ranting on about crappy foreign manuals

■ **Day Five:** I knew it wasn't going to be a good day when He muttered something about getting to grips with programming by the end of the day. He didn't get off to a very good start (well, the program icon doesn't look that much different to the others). Then when He did get it loaded (after He had tried double-clicking on every single file), He gave up after five minutes in total bewilderment

■ **Day Six:** There is a god after all. He finally let Son have a go of me. After just two minutes he had a BASIC program running and then indulged in a good long blast on the game that He had bought. However, after gazing over Son's shoulder for a few minutes He declared that He was off to use some technology He did understand, wandered downstairs, dug out the strimmer and edged the lawn

Still can't find your *ST FORMAT?*

Still having trouble getting hold of *ST FORMAT?* If your newsagent doesn't have a copy on the shelf, try asking the person standing behind the counter. They might have some more in the back room. If that doesn't work, check one of the bigger newsagents, like John Menzies or WH Smith. If you don't want to subscribe – and see page 110 for some good reasons why you should – fill in the form below and hand it to your newsagent. Every newsagent in the country will be delighted to reserve you a copy each month – or even deliver it to your door.

Still no luck? Then call the extremely helpful Kate Hodges in Future's circulation department on ☎ 0225 442244 and tell her which of Future's magazines you're after and where you've tried to get hold of it. She can sort out your problems in no time at all!

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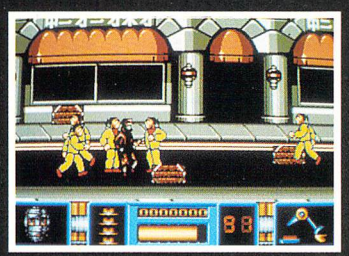
ADVERTISERS INDEX

1st Choice (Leeds) ..54
Abeville 106
ABS.....126
ACS.....131
Akore.....71
Analogic 116
Atari.....IFC, 3
AVR 117
B Soft 97
BCS.....135
Best Prices.....88
Byteback 73
Caledonia.....46
Cambridge 106
Capital North 12
Computerwise 131
Coombe Valley....125
Datagem Ltd 106
Datel.....42
Dial a Disk.....125
Dowling 18, 19
Evesham 38, 39
Gasteiner 32
HCS 105
Hi Soft 14
Home Based 115
Hunter 105
Ladbroke 109
LAPD.....48
Lazersoft 81
Lazer Dist.....97
Mail Centa 114
Manor Court.....128
Matrix 126
MD Office 102
Media Direct.....76
Merlin Express 25
Metropolis 48
Microdeal 45
Miditech.....116
Mindscape.....10
MJC Supplies.....92
Moriarty 131
MT Software.....51
Nightshift 48
Ocean..91, IBC, OBC
Office Choice 46
Paradise.....97
PD PDom 78
PDST 48
Penge.....115
PLC 116
Post Haste.....115
Power PD.....48
Power Comp 29, 37, 87
Premier Mail.....84
Protar 53
Ramara House....131
RC Simulations ...131
Redlaw 105
Renegade 13
Richards Devel....115
Riverdene PDL.....46
Selec Software....125
Soft Exchange.....115
Soft Logic 27
Softmachine 97
Special Reserve.....9
Sphinx 46
ST Club 134
Stables 125
Star Associates ...125
Supply Solutions .126
Tracy 135
Turbosoft.....122, 123
UK Soft Exchange 131
Universal Overnight Distribution 112
We Serve 105
Wizard.....134
Working Title 68

DARKMAN







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ALL THAT HE LOVED
EVERYTHING THAT HE WAS

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My head is thumpin', and my heart is pumping the adrenalin around every vessel of my hyper-tense body - the 'driving unit', that will be shoe-horned, wedged like a Colt 45 into it's holster, as I am placed into the command seat of my vehicle - ready to enter the arena of play... and combat. "Wild Wheels" they call us. Combatants who play a "game" - a game where there are two ways to lose... down on points or down on fuel - the fuel of life!

And our "kit" for action are the finely honed masterpieces of engineering...machines that will pole-axe the opposition, melt them, crush them, detonate them into a million white-hot, speeding grains of shrapnel. The 'kit of death' where many of us will experience our last, final, blinding flash.

Now, in the arena, the game becomes a struggle to win, a fight for life. The noise from the screaming crowd is drowned by the incessant roar of the mighty heart of this mechanoid beast, it's engine pushing out every ounce of power to keep me just ahead, and delivering a heavy, sickening blow into my back as it accelerates at my command. Taking aim, I firm up every muscle ready for the great burst, the deafening scream as I unleash my lethal messenger... and its message - "GAME OVER!" But that's just half the game story. Now YOU enter the arena... ENJOY THE SHOW!

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